

# Who Owns the Wind?

Community wind co-ops to combat commodification

*Robert Wade*

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(30hp/credits)



## LUCSUS

Lund University Centre for  
Sustainability Studies



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## **Abstract**

The threat of potentially catastrophic climate change has led to 195 countries pledging to keep global average temperature rise well below 2°C based on pre-industrial levels. Wind energy technology has developed to a point where it can make a significant contribution to meeting this objective. A number of countries have developed substantial wind energy networks in recent years which in turn has attracted much scholarship. The environmental impacts of wind energy technology have been the subject of considerable scientific scrutiny. However, the social implications have often been examined in terms of people's different responses or 'attitudes' to wind energy, with the underlying aim to achieve 'social acceptance'. In this thesis, I take an alternative perspective: I contend that the technological fix discourse which often accompanies wind energy technology masks the social relations underpinning the deployment of these technologies. Using the lens of commodification, I argue that commodity relations have underscored the deployment of much onshore wind capacity. Through this examination I 'de-reify' these relations and normatively critique them based on their consequences for society. These include, but are not restricted to, economic inequality, cultural landscape deterioration and degradation of community ties. By showing that these relations are neither natural nor necessary but social and contingent, I open the door for alternative social relations that might abate the negative impacts stemming from commodification. After unpacking different forms of community energy, I argue that community wind energy co-ops can be conceived of as a practice of 'commoning'. This claim is illustrated with fieldwork on the Aran Islands Energy Co-op off the West of Ireland. The logic of commoning is counterposed to that of commodification and can provide a viable alternative that can use wind energy technology while avoiding the undesirable social consequences stemming from commodification.

**Keywords:** Wind energy, Commodification, Commons, Social Consequences, Reification, Co-operative

**Word count (thesis): 13,997**

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# 1 Introduction

## 1.1 The Climate Emergency

Climate change is a 'core' planetary boundary: the transgression of which is likely to have cumulative feedback and spill-over effects into other earth systems (Rockström et al., 2009; Steffen et al., 2015). The Intergovernmental Panel on Climate Change's (IPCC) fifth assessment report states:

*“Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.”* (IPCC, 2014, p. 8)

In the face of potentially catastrophic climate change 197 countries signed the Paris Agreement in December 2015, agreeing to “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (UNFCCC, 2015). This monumental task will require an average of around 10% annual reductions in energy-related CO<sub>2</sub> emissions from 2025, reaching net zero emissions by 2050, to have a 66% chance of staying below 2°C (Anderson, 2015). Instead of relying on silver bullets, most countries have recognised the need for a 'silver buckshot' approach (Werrell & Femia, 2014): To mitigate global climate change, a variety of renewable energy sources can be employed such as solar, wave, biomass, tidal, and wind. This thesis focuses on the renewable energy option of wind in mitigating climate change.

## 1.2 The Wind

Humanity's historical relationship with wind ranges from Columbus' voyage to the 5000 windmills in operation in England around 1800 (*Images 1 and 2*) (Malm, 2016, p. 43). Wind is simply “air in motion relative to the surface of the earth” (American Glossary of Meteorology, 2012). The 'flow' of the wind as a usable energy source for humans is determined by conditions in space (i.e. the landscape) and time (weather cycles) (Malm, 2016). With climate change as the impetus, it is now more desirable than ever as an energy source. Earth's wind resources are abundant enough to meet global energy demand (Archer & Jacobson, 2005; Lu, McElroy, Kiviluoma, & Anderson, 2009). Wind is geophysically inexhaustible at the global level, meaning its harvesting does not slow its movement to other places (Marvel, Kravitz, & Caldeira, 2013). It is now also technologically feasible to harvest

wind in such a way to meet this demand in a cost-effective manner (*Image 3*) (Jacobson & Masters, 2001).



**Images 1-3.** Columbus' Santa Maria, an English windmill and a modern wind turbine. Source: Wikimedia Commons (n.d.)

While there are problems with intermittency and storage, which makes an overreliance on wind unviable at the moment (Richter, 2014), some countries have ploughed ahead and invested heavily in wind energy. For example, the German *Energiewende* has resulted in 50GW of installed wind capacity, approximately 25% of net electricity generation ('Net installed electricity generation capacity in Germany', 2017). In 2016, 51% of all new power installations in Europe were wind energy (WindEurope, 2017). Much wind energy development is on a commercial basis, whether they are public or private companies, with an emphasis on the need for wind energy technology being market competitive (REN21, 2016). States often provide subsidies to support the wind energy industry and to promote investment (Alberici et al., 2014). Recently, the "groundbreaking" decision of Dong Energy to develop off-shore wind off the German coast has shown the market competitiveness of wind (Clark, 2017).

### 1.3 The Claims

The nature of wind energy technologies to date means they must be anchored to the ground. This has meant that onshore developers often rent or buy land from private landowners to erect turbines (Bolinger, 2001; REN21, 2016). It is this form of commercial wind energy development that I focus on for my critique, while recognising that others exist. The first claim of this thesis is that **the peculiar**

**nature of wind and the technology used to harvest it, combined with private land property relations, has led to the wind being commodified.** This process involves private landowners extracting extra income or rent from their land due to its advantageous spatial location. This represents the commodity price of the wind<sup>1</sup>. The sub-processes of commodification, as elaborated by Noel Castree (2003) (Ch.5), include amongst others privatisation, individuation, monetary valuation and displacement. These sub-processes can provide an analytical foundation to trace out a link between commodification and its consequences, as landowners begin to perceive the wind purely in terms of this new economic value. My second claim is that this **commodification results in detrimental social consequences**. These include primary consequences such as deepening economic inequality and destruction of cultural heritage. The secondary consequence is an erosion of social ties<sup>2</sup>, which is the motivation for this research. The implication of this is that we should be cognizant of the social consequences of technological solutions to sustainability problems such as renewable energy. Not only this, we should go beyond awareness and critically examine how these technological solutions are applied. We can begin to ask: ‘why does commercial wind energy development tear communities apart?’. While I am concerned primarily with the social consequences of wind commodification *in and of themselves*, understanding them may help to explain the considerable proportion of social opposition to wind energy, which has been the subject of much research (Fast, 2013). Indeed, ameliorating these social consequences could have positive knock-on effects in terms of opposition, possibly contributing to the speed of the energy transition.

The fulcrum point of this thesis is that the process of commodification and the extension of private property rights<sup>3</sup> (which are ultimately social relations) has become so naturalised in the case of wind that we do not even question it. This is what Lukács calls ‘reification’:

*“when a relation between people takes on the character of a thing and thus acquires a ‘phantom objectivity’, an autonomy that seems so strictly rational and all-embracing as to conceal every trace of its fundamental nature: the relation between people” (Lukács, 1967, Ch1, Para.1).*

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<sup>1</sup> Economic theories refer to this value in various ways, for example Marxist literature might use the term ‘rent’. I use the term ‘price’ for the sake of simplicity.

<sup>2</sup> I use primary and secondary to denote the order of causation, not of importance. Indeed, the secondary consequences are my main concern. The reason I use these terms is to avoid confusion with 1<sup>st</sup> order and 2<sup>nd</sup> order mechanisms, which I explain in Section 3.2

<sup>3</sup> Privatisation is generally used in the sense of privatising public goods or services like water or rail transport. However, following Mansfield (2008), I use it here to denote the ascription of private ownership rights, usually to an individual, excluding others. The ultimate exercising of control asserted by landowners in deciding who may or may not harvest the wind that blows over their land may be said to represent a *de facto* process of privatisation. I describe the process of privatisation in Section 5.2.1.

Thus, while nobody formally owns the wind, the title of my thesis *'Who Owns the Wind?'* is intended to serve as a de-reifying provocation. It allows us to recognise the contingency of commodification and private control over the wind. Once this is recognised we can pivot to the search for alternatives.

Stemming from this search, my third claim is that **common management of the wind can provide an alternative that avoids commodification's deleterious social consequences**. 'The commons' has been counterposed to processes of commodification (Arvanitakis, 2006; Bakker, 2007). Common governance of the wind provides an alternative to the governance by the market when the wind is treated as a commodity by private landowners. However, community energy means many different things and not all forms can be labelled commons, nor are they all likely to counter commodification. I distinguish between forms of community energy (see appendix A) and, using an exploratory case of the Aran Islands Energy Co-op in Ireland, I show that 're-embedding' the governance of wind resources in local community co-ops can avoid the abrasive social impacts of commodification (Adaman, Devine, & Ozkaynak, 2003).

#### **1.4 Aims & Contribution to Sustainability**

One of the strongpoints of sustainability science is its recognition of the interaction between social and environmental systems (Jerneck et al., 2011). This thesis tries to show that we must not only consider the social drivers of environmental sustainability problems but also the social ramifications of their solutions. Overly pragmatic approaches conceal or reify social relations in such a way that we cannot question them. This renders alternative visions unimaginable and portrays any undesirable social consequences as inevitable. I also show that if we *do* consider the role social relations play in designing solutions, it gives us a greater breadth of options to solve problems. As Verweij et al. (2006) rightly note, to solve sustainability problems like climate change, what will most likely be needed are 'clumsy' configurations of social relations which include elements of hierarchy, individualism and egalitarianism. In concurrence, Elinor Ostrom has repeatedly emphasised the assertion that there are 'no panaceas' (Ostrom, Janssen, & Anderies, 2007).

However, beyond analytical breadth, sustainability science also has a normative dimension which compels us to critically examine ethical implications of our proposed solutions (Wiek, Ness, Schweizer-Ries, Brand, & Farioli, 2012). 'Clumsy' analytical solutions must be subject to ethical consideration when science and society are in dialogue:

*“crafting a viable vision of the future; deliberating on those visions and the values they represent; exploring the potential sociotechnical pathways that might realize such a vision; and developing the social and institutional structures that enable communities to continually learn and adapt to new knowledge, values, technologies and environmental change”* (Miller et al., 2014, p. 240).

This thesis takes seriously the social implications of implementing different ‘sustainability pathways and strategies’ with regard to onshore wind energy deployment, and reminds us to keep in mind our value-laden ‘sustainability goals’ along the way (Jerneck et al., 2011). By recognising not only the consequences of wind commodification for social relations, but also the role these relations play in the implementation of sustainability pathways, we can envision analytically and ethically better solutions. **My aims are twofold: Firstly, to highlight that commodifying the wind has detrimental consequences for social relations. Secondly, by recognising the role social relations can play in solutions, I propose an alternative that solves the environmental problem while being normatively favourable from a social point of view.** These twofold aims overlap with the ‘two cross-cutting approaches’ (critical and problem-solving) involved in sustainability science research (Jerneck et al., 2011).

## **1.5 Layout & Research Questions**

This thesis proceeds as follows: In the next chapter I introduce the current debates of how wind energy impacts society, contrasting my approach with these. This provides a good entry point to my methodological foundations in critical realism which underpin my research design (Chapter 3). Chapter 4 introduces social capital as a proxy concept for community. Chapter 5 provides my first round of analysis, looking into the process of commodification of wind: this includes expounding the concepts I use as well as applying them to the case of wind. I draw out the primary consequences of this process with some illustrative examples from my fieldwork. Chapter 5 answers my first two research questions (RQs):

**RQ1: How is the wind commodified?**

**RQ2: What are the social consequences of the wind being commodified?**

After demonstrating how wind is commodified and revealing the consequences of this commodification, Chapter 6 is the fulcrum of the thesis which, through de-reifying the process of commodification, allows us to pivot to solutions. Chapter 7 takes up this challenge and begins my second round of analysis: I introduce ‘the commons’ and explain how common ownership might

resist commodification, thus answering RQ3. In Chapter 8 I introduce my case study and show how community energy co-operatives can avoid the social consequences caused by commodification of wind, thus answering RQ4. Thus, chapters 7 and 8 answers RQ3 and RQ4 respectively:

**RQ3: How does commoning resist the sub-processes of commodification?**

**RQ4: What are the social consequences of common management?**

Having answered my research questions, I conclude with a brief appraisal of limitations, potential directions for future research and a concluding discussion.

## 2 What about the Social?

A literature review of the social impacts of wind energy reveals that much research on the social implications of wind energy deals with questions of social acceptance and opposition. I regard these as the wrong questions: opposition and acceptance are problems instrumentally for the energy transition, but not necessarily for social relations in themselves. Instead, I concern myself with understanding and explaining the degradation of community ties that is perceived to accompany commercial wind energy development. This chapter introduces the current debates on how wind energy development impacts society from a ‘social acceptance’ perspective, and contrasts my approach with this.

### 2.1 Wrong Questions: The Social Acceptance Approach

The academic debate on how wind power affects local populations has often been framed in terms of social opposition and acceptance. This literature on social acceptance has evolved through the years, with NIMBY (not-in-my-back-yard) explanations subjected to empirical, theoretical and even political critique (Devine-Wright, 2005; Jones & Eiser, 2009; Michaud, Carlisle, & Smith, 2008; Petrova, 2013; Wolsink, 2000). There has been a gradual increase in understanding that tumultuous community dynamics might be central to the emergence of opposition (see Batel & Devine-Wright, 2015; Devine-Wright, 2007; Reusswig et al., 2016; G. Walker et al., 2011). While recognition of the importance of “contextualised local social dynamics” is important (Reusswig et al., 2016, p. 215), the literature remains predominantly “managerialist” (González, Daly, & Gleeson, 2016, p. 13). Achieving community acceptance of wind energy is seen as instrumental to overcome the ‘social gap’ between local opposition and the broad consensus that decarbonisation is needed (Bell, Gray, & Haggett, 2005). In my view, this research poses the wrong question when it asks how to overcome local opposition. My approach inverts this perspective in that I am concerned with the effects on local community relations *in and of themselves*, while acknowledging that their amelioration might produce positive feedbacks for the energy transition in terms of social acceptance.

### 2.2 Right Questions: The Degradation of Community

On an anti-wind energy website one blogger makes the comment: “It has become a cliché to say, towns targeted for industrial wind installations are torn apart by the experience” (Tips, 2016). As mentioned in the introduction, it is this specific and common form of wind energy development whereby developers buy or rent land from private landowners that is the subject of my critique. While websites such as this clearly attract those most vehemently against wind, there is still some

truth to the statement that needs investigating: Instead of focussing on the opposition that stems from “contextualised local social dynamics” we can direct our concern first and foremost to these dynamics as important in themselves (Reusswig et al., 2016, p. 215). However, taking the social impacts of wind energy seriously does not necessitate rejecting the technology. We need to be realistic about its crucial role in the energy transition. Technological change can have profound ramifications for social relations; destabilising and throwing them into question: “All that is solid melts into air, all that is holy is profaned, and man is at last compelled to face with sober senses his real conditions of life, and his relations with his kind” (Marx, 2008, p.6). This provides an opportunity to examine and redesign how society is structured. However, this opportunity is not always clear to see. Indeed it can be obfuscated by an ecological modernisation discourse which tells us that development and deployment of new technologies can solve our environmental problems without the need consider social relations (Dryzek, 2013). Such technological pragmatism only serves to reconstitute dominant relations and ideologies. Patrick Bresnihan illustrates how neoliberalism as a logic works in such a pragmatic way, working to achieve instrumental goals and refusing to acknowledge questions of politics or ethics (Bresnihan, 2016). This is essentially the same point I make about reification above in the introduction. Any deleterious social consequences like tearing communities apart become naturalised albeit unpleasant by-products of solutions to more pressing ‘wicked’ sustainability problems like climate change (Jerneck et al., 2011). However, if we can shake off these blinkers we can ask: ‘why does commercial wind energy development tear communities apart?’.

### **2.3 Wrong Approaches to Answering the Right Question**

To answer how commercial wind energy deployment impacts community, we could employ empirical research such as surveys and questionnaires. One could also talk to locals and ask them why they are in a dispute with their neighbour. An answer one might receive could be that they are annoyed because their neighbour allowed a wind farm to be built that spoils their view of the local hills. However, such research only provides an explanation at quite a shallow level. I contend that remaining at this level of explanation amounts to a reification of social relations. We need to dig deeper and ask: why was that turbine erected there in the first place? What caused him to do this? Is this the only way for turbines to be built? These new questions might seem mundane at first but they involve an investigation into more fundamental questions of social relations. This line of inquiry can uncover new perspectives and possible alternative scenarios, as this thesis aims to show. The following chapter introduces critical realism as a philosophy of science that suits these theoretically-bound lines of inquiry.

### 3 Critical Realism: The Right Approach to Answering the Right Question

In this chapter I first introduce Critical Realism (CR) as a distinct philosophical system before explaining why it is useful for my purposes and applying it to my research design. CR differentiates itself from other competing philosophies naturalism and constructivism by simultaneously defending the existence of an accessible reality while accepting the fallibility of human knowledge (Moses & Knutsen, 2012).

#### 3.1 Critical Realism

##### 3.1.1 Depth Realism

The 'realist' part of Critical Realism is due to its belief in reality, which it divides into three ontological domains (Collier, 1994): The Domain of the Empirical is everything that we observe or experience. But we know that sometimes things happen that we do not experience. This means there must be another level of events that occurs independently of our observation. These observable (but not always observed) events form the Actual Domain. However, events do not 'just occur'. Rather, they are made possible by underlying structures or mechanisms that tend to produce certain events, which may nor may not be observed. These structures have an ontological reality of their own, meaning that non-observable, theoretical entities like society or atoms are not just explanatory constructs (Collier, 1994, p. 7). When we add these structures to events and experiences we get the Domain of the Real. It is this domain that science seeks to uncover. *Figure 1* below represents the three domains and their components.

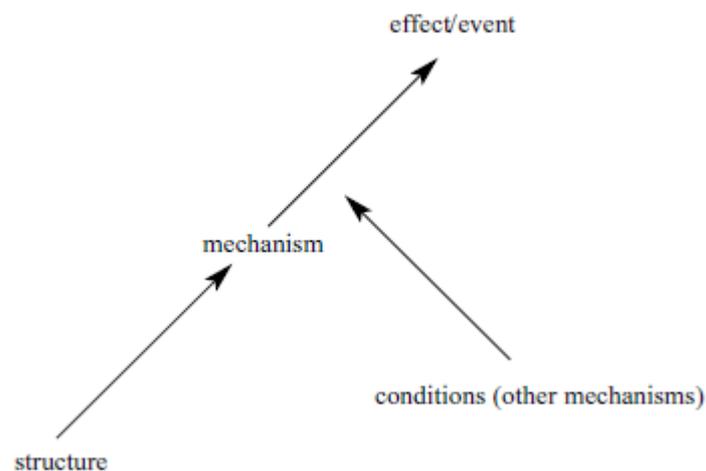
	<i>Domain of Real</i>	<i>Domain of Actual</i>	<i>Domain of Empirical</i>
<i>Mechanisms</i>	✓		
<i>Events</i>	✓	✓	
<i>Experiences</i>	✓	✓	✓

**Figure 1.** Bhaskar's ontological framework organised into domains. Source: Bhaskar, 2008, p.47

Another element of CR that is important here is the relational nature of social structures. Structures like family are composed of particular configurations of relations between people that are established before people participate in them, such as the parent-child relation (Bhaskar, 1989). It is from these configurations of relations that the power of structures 'emerge' (Elder-Vass, 2010), and through them they exert their powers.

### 3.1.2 Causation

Another important contribution of CR is its model of causation. Generative mechanisms are those elements of a structure through which it produces events (Sayer, 2000). Mechanisms are not always activated, though. In open systems, what we experience is usually explained by numerous different mechanisms interacting to produce an event. For these reasons the critical realist view of causation diverges from the positivist view of causation that remains at the level of events (Sayer, 2000). *Figure 2* below illustrates this view of causation.



**Figure 2.** Critical realist view of causation. Source: Sayer, 2000, p. 15

### 3.1.3 Epistemological Implications

The critical part of CR comes from its adoption of a form of epistemological relativism. CR acknowledge that accessing these structures is not easy since there are always many structures at play when we make an observation meaning we cannot rely on observation alone (or rely too heavily on survey responses, for example) (Collier, 1994). The experimental method is used to artificially isolate the powers of one structure, and is therefore the pinnacle of the scientific method (Collier, 1994), however other methods are less certain. Additionally, our knowledge is always historically situated, never infallible and always open to challenge – or *transitive* (Collier, 1994; Della Porta & Keating, 2008). Nonetheless, science can enable us to have better knowledge of the underlying mechanisms (which are *intransitive*) than other forms of knowledge gathering, distinguishing it from heavily constructivist or postmodernist approaches (Collier, 1994). This does not mean all social scientific theories are equally valid, though, and we should aim to discredit those

that do not reflect reality. CR directs us to retroductively inquire: what structures must be in place for the perceived phenomenon to have occurred? (Bhaskar, 2009).

### ***3.1.4 Usefulness for My Purposes***

This form of retroductive inquiry is useful for me because it allows me to go beyond the empirical to postulate theoretical structures and logical explanations for why certain events occur. In particular, I need to explain why certain actors (landowners) can make certain decisions about wind turbines, and what structures are in place that enables them to do this. As stated in my introduction, I argue that it is the process of commodification that influences the landowner's decision. Two social structures underpin the process of commodification: Firstly, as Polanyi points out, the commodity relation is the social relation that consolidates the market as a structure independent of society with its own powers (Polanyi, 2001) (more on Polanyi in Ch.5). Secondly, "property relations structure our relationship not only to resources necessary for life, but to life itself and even ourselves" (Mansfield, 2008, p. 2). Property and the market can be understood as two social structures who intersect through the process of commodification (I describe this process in detail in Section 5.2). They exert their powers on those who participate in them (i.e. landowners), whose subsequent actions can produce knock-on effects on other social relations and structures (i.e. community). Systems thinking is a key competency in sustainability science (Wiek, Withycombe, & Redman, 2011): while it is unlikely that sustainability science can enable us to reach consensus regarding causal mechanisms in dynamic complex systems (Miller, 2013, p.290), the identification of causal structures whose role have not before been recognised might improve our ability to guide nature-society interactions along sustainable trajectories (Kates et al., 2001, p. 642). Indeed, this is the meaning of interdisciplinarity (Jerneck et al., 2011). Simply observing the surface patterns of community conflict and describing them is an insufficient explanation. Understanding the landowners' decisions as mechanisms engrained in social relations offers the possibility to de-reify, scrutinise and challenge them – giving the possibility of emancipation from "enslaving appearances" (Collier, 1994, p. 15). Since structures are relational, structural change involves changing the configurations of relations that produce that emergent structural power. This is the point of departure for Ch.7 on alternatives. The generality and knowability of these social structures opens the door for broader transformative change that is not restricted to individual contexts. This exemplifies the congruence here between the transformational goals of sustainability science and the emancipatory aspirations of critical realism (Collier, 1994; Wiek et al., 2012).

### 3.2 Research Design

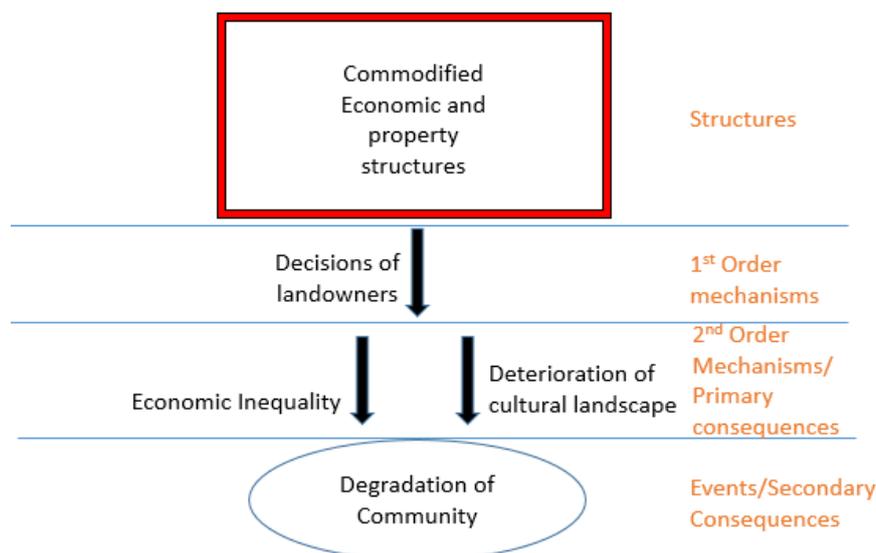
In this section, this philosophical underpinning is made explicit with regards to how I apply it to my research design for answering my research questions. I go through each research question and explain how I will answer, for the sake of clarity.

#### RQ1: How is the wind commodified?

To answer how the wind is commodified I employ a theory of commodification and apply it to the peculiar case of wind (Section 5.2). The process of commodification is at the intersection of two social structures: the market and the economy, as abovementioned (and shown in *Model 1* below).

#### RQ2: What are the social consequences of the wind being commodified?

This involves the tracing out of both the 1<sup>st</sup> and 2<sup>nd</sup> order mechanisms that result from commodification (Section 5.3). Again, this is done theoretically, as I retroductively provide an explanation for the perceived degradation of community. I use some illustrative material sourced from deskwork and from my case study research (which I introduce in Ch.8)<sup>4</sup>. I should emphasise that, in this round of analysis I use my case for illustration only. The explanatory work is done theoretically. I then discuss the ultimate (or secondary) consequences of this process for community (Section 5.4). These mechanisms and consequences are visible in *Model 1* below.

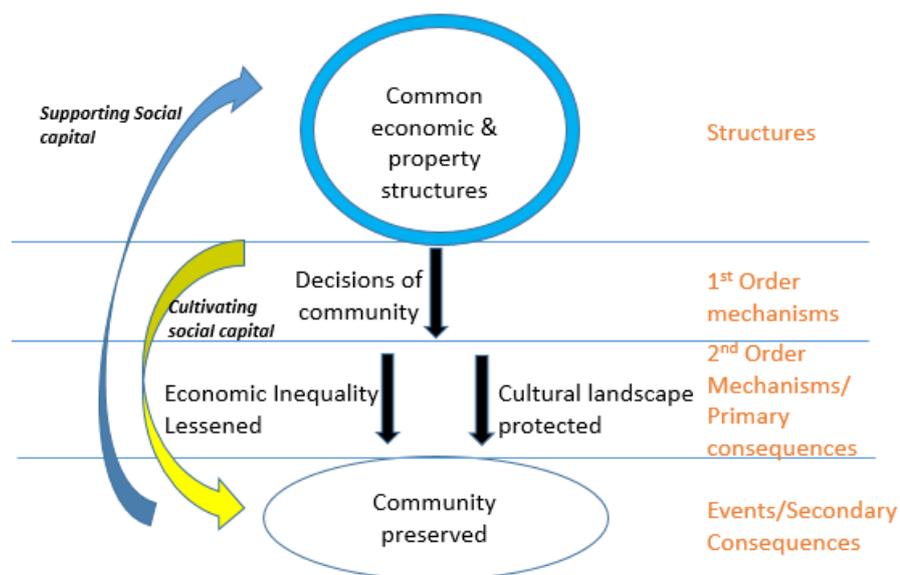


**Model 1.** The commodification model with CR labels (orange). Source: author

<sup>4</sup> While the community researched has not directly experienced commodification of the wind, the community co-operative I spoke to can be considered a direct alternative to that process, thus its committee members are well-placed to evaluate its consequences. Some of their insights into the effects of commodification are useful for illustrative purposes.

**RQ3: How does commoning resist the sub-processes of commodification?**

Having traced out the negative social consequences of wind commodification I turn to the search for alternatives. In a similar fashion to my answer for RQ1, I applied the concept of the ‘commons’ management to the wind (Section 7.3). Through this, I theoretically compare common management with the management that stems from commodification, using three key ‘sub-processes’ of commodification identified in Ch.5 as analytical tools. The ‘common’ economic and property structures are visible in *Model 2* below.



**Model 2.** The commons model with CR labels (orange letters). Source: author

Having identified commons as a theoretical solution with potential, it is important to ask how this might be applied in practice. I categorised three main types of community energy under the analytical lens of commons/ability to resist the sub-processes of commodification (Appendix A). Based on this categorisation of different models of community energy I identified the community co-op model as a good contender to resist the process of commodification and the resultant mechanisms. Thus, with the community co-op model I answer:

**RQ4: What are the social consequences of common management?**

Similarly to RQ2, I draw out these mechanisms theoretically (see *Model 2*). However, I also employ a case study of the Aran Islands Energy Co-op (introduced in Chapter 8). While I had Model 2 in mind based on my theoretical analysis, the case study was used to validate and at times inform the model, and not just illustratively for this round of analysis. The tools I used were qualitative because a quantitative approach would not have allowed me to zoom in on the internal logic of the co-

operative. My primary source of information were ten in-depth semi-structured interviews: eight co-op committee members, a community-energy campaigner and an energy co-operative consultant. This was a non-randomised, purposive sample that was obtained through snowball sampling (except the campaigner who I reached through my personal network). While the sample was primarily composed of committee members, my aim was not for statistical analysis or predictability but rather for deepening understanding of the co-op's internal logic. The semi-structured 'interview guide' approach was chosen because of its openness which enables fruitful and unexpected lines of inquiry to be pursued, potentially leading to theory change, while also providing a theoretical anchor through the questions (Patton, 2015). Through these interviews I could explore imaginary scenarios or scenarios in different times and places, to understand these consequences. Despite no interviewees requesting anonymity I assigned them aliases due to the close-knit nature of the community and the potentially volatile nature of wind turbine opinions. To 'triangulate' my findings (Patton, 2015), I observed two co-op meetings (including their AGM), as well as a public meeting proposing a site location for a wind turbine. I also analysed internal documents as well as newsletters sent to members. I initiated several informal conversations with locals, while remaining perceptive to discourses present. While these were valuable supplementary ways to capture data, they mostly validated my interview findings.

## 4 What do We Mean by 'Community'? Social Capital as a Proxy Concept

Before beginning analysis, it is important to specify what is meant by degradation of community, and how this can be judged. This chapter introduces social capital as a proxy for community ties:

Social capital can be used as a conceptual proxy for community. The concept has a legacy from Durkheim through Bourdieu but its most famous proponent is probably Robert Putnam whose book *Bowling Alone* (2000) brought it to mainstream attention. I stick with Putnam's 'cultural' account of social capital. Social capital refers to social networks and their associated norms of generalized reciprocity (Putnam, 2000). Generalized reciprocity works under the maxim of the 'Golden Rule' or 'I'll scratch your back because I know someone in my social network will scratch my back if I ever need it'. One internalises social norms of reciprocity and acts accordingly, even when it is not in one's direct, instrumental interest. This generalized reciprocity has also been called sociability: "the component of social capital, which is related to non-instrumental relationships among individuals" (Bartolini & Bilancini, 2010). Indeed, social capital has been correlated with subjective wellbeing (Bartolini & Bilancini, 2010; Bartolini, Bilancini, & Sarracino, 2016). The collective goals that groups or society want to achieve are far easier to achieve if norms of reciprocity engender cooperative behaviour (Putnam, 2000). Trust and social capital are tightly related and self-reinforcing concepts (Siisiainen, 2003). The positive outcomes of social capital include support, cooperation, and institutional effectiveness (Putnam, 2000). While these social networks can be supported by the state and top-down institutions, they are often organic. Indeed, without these social networks man's nature might resemble Hobbes' description as "solitary, poore, nasty, brutish, and short" (Hobbes, 2009 [1651], Ch.XIII, para. 5). Fortunately, though, people do form social networks against which we can lean. I focus my analysis at what Donati calls the primary level of social capital: those social networks that are in a sense closest to you such as family, friends or local community (Donati, 2014). This concept of social capital serves as a proxy concept with which I can assess community wellbeing. Having established this, we can return to what I consider the 'right' question: 'why does commercial wind energy development tear communities apart?'. In the next chapter I employ Castree's (2003) theory of commodification to get at the deeper causes of community degradation.

## 5. *Who Owns the Wind?* - Commodification and Its Discontents

### 5.1 What is Commodification?

Commodification broadly refers to assigning an exchange value to a good or service, for it to be tradable on the market (Castree, 2003). Commodification does not entail any alteration of the thing in itself. Instead, it involves a shift in the social relations pertaining to interaction with that resource: it is now for sale and exchangeable in commodity relations. In his classic work *The Great Transformation*, Karl Polanyi (2001) describes the historical expansion and coming to dominance of the Market over Society since the Industrial Revolution. Central to this process was the 'fictitious' commodification of land (nature), labour (people) and money, as these things, though not produced like real commodities, were put on the market for the first time, thus generating profits for their owners (Polanyi, 2001). This profit imperative generated by the market in turn produced positive feedbacks as the more profits that were squeezed, the more 'free' common and open access resources were commodified to sustain profits in the competitive market. As new resources become accessible through technological change, they become exploitable to drive capitalist expansion and economic growth (Lewis, 1955). Regarding natural resources; many were previously commonly owned and governed but through processes of enclosure they were transferred into private (or public) ownership and sold. This often led to resistance from the common owners (Poteete, Janssen & Ostrom, 2010) One modern-day example of capitalist enclosure is the land grabbing across the Global South (Greco, 2015; Ince, 2014). This is not to say that commodity relations are unique to capitalism, and there is literature pointing to pre- and non-capitalist forms of commodity relations (see Appadurai, 1986).

Commodification has been used in many different ways ranging from the commodification of environment (Clark, 2013) to culture (Harvey, 2002) and space (Bresnihan & Byrne, 2015). Noel Castree (2003) provides an overview of the different forms of commodification and draws common linkages between them. The six interconnected sub-processes of commodification are privatisation, alienability, individuation, abstraction, valuation and displacement (Castree, 2003). Castree shows that the extent to which something can be commodified depends on the inherent nature of that which is being commodified, as well as the ethical stigma surrounding it (e.g. in the case of body parts). This ties in with Polanyi's observation that commodification robs that which has been commodified of its social protection (Polanyi, 2001). Pure commodification would totally expose the commodity to the whims of the owner in response to market prices, however sometimes there are remnants of social norms that cling on and offer some 'protection'. This entails that commodification

takes many forms. Having introduced the concept of commodification, I turn to answering **RQ1** and explain how wind is commodified.

## **5.2 Commodification of the Wind**

The complexity of commodification means a full analysis of how wind is commodified is beyond the scope of this thesis. Here I trace out what I consider to be the four sub-processes most relevant to wind, based on Castree's (2003) typology, thus answering **RQ1: How is the wind commodified?** This will be enable us to identify the deep structures that underpin the wind's commodification.

### **5.2.1 Privatisation**

Commodification of the wind is peculiar in the sense that its occurrence was somewhat automatic. Generally, the wind was never previously held in common by groups. It was simply assumed to belong to nobody. While commodification does not entail formal legal rights over the wind, property here rights refer to *"sanctioned behavioral relations among men that arise from the existence of things and pertain to their use"* [italics from original] (Furubotn & Pejovich, 1972, p. 1139), rather than between men and things. It is based on this definition that I use **privatisation** as the ascription of exclusive, sanctioned private ownership rights. This is in line with Mansfield's (2008) usage which differs from the common application of the term to denote de-nationalisation. While landowners do not claim explicit ownership of the wind, I contend that they are de facto extending their private property rights of their land to the wind that blows above it, since they alone make the decision about the use of that particular 'patch' of wind. People acknowledge that the landowner has the final say on whether that wind is harvested, excluding others in the community. The private control over particular 'patches' of wind that this commodification often entails clarifies my title '*Who owns the wind?*' and uncovers property structure as a deep structure underpinning to commodification.

### **5.2.2 Individuation**

The next process of importance is the **individuation** of the wind, or its detachment from its inherent situatedness in the complex world. For example, to extract redwoods from their forest habitat and ecosystem, each redwood must be seen as an individual object, separate from its surroundings. The way of seeing the wind as a parcel is the same way the state regulates its territory in terms of 'nested domains' (Hägerstrand, 2001). As Hägerstrand rightly argues, this vertical perspective misses out on beliefs, norms, symbolic interactions and people's mental pictures of the world: "actors in the

landscape are the ones who receive the most intimate direct experience of the world, natural as well as technical” (Hägerstrand, 2001, p.56). The parcellated and individuated perspective of the world misses out on the direct human experiences in the landscape, a point I expand upon later. The individuation of the wind goes hand-in-hand with the process of privatisation which ‘bounds’ the parcel of wind. Indeed, all the sub-processes of commodification are intimately related. Individuation is important because it allows the commodity to be separated out and assigned a comparable value, which leads to the next step.

### **5.2.3 Valuation**

The process of **valuation** occurs via “the peculiarly colourless, contentless medium of money” (Castree, 2003, p. 281). The wind is not being valued directly but rather indirectly through the royalties the landowners receives for use of their land. “Based on the monopoly power of private owners of certain portions of the globe” these landowners “realize an enhanced income stream over [...] by virtue of their exclusive control over some directly or indirectly tradable item”<sup>5</sup> (Harvey, 2002, p.93). This valuation makes it tradable, in the sense that owners of suitable pieces of land can trade the use of their land for that price. This valuation is ruled by the supply and demand of the market. We can thus identify the market structure as one of the key structures underpinning the process of commodification. In terms of critical realism, it is *of* commodity relations that the market structure is composed, and *through* them that it exerts its power.

### **5.2.4 Displacement**

Finally, the culmination of commodification is the **displacement** of the wind (Castree, 2003). The wind appears inherently as a *thing* to be bought or sold on the market in the pursuit of profit maximisation. The necessary extension of market and ownership that allow it to be sellable in the first place become occluded to us. It is this displacement that ultimately results in the degradation of not only the commodity itself, but also the real social and natural relations that enmesh it. Cultural norms or rules that might have governed interaction with the wind are weakened (the process of pure commodification is rare so they are seldom rendered totally redundant).

The above analysis of how the wind is commodified has provided a thorough answer to **RQ1**. Through it we could identify the market structure and the property structure as underpinning

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<sup>5</sup> Although Harvey only refers to private owners here, others ‘rentiers’ from tribal chieftains (Capps, 2016) to states can obtain a commodity price in this way (Campling & Havice, 2014).

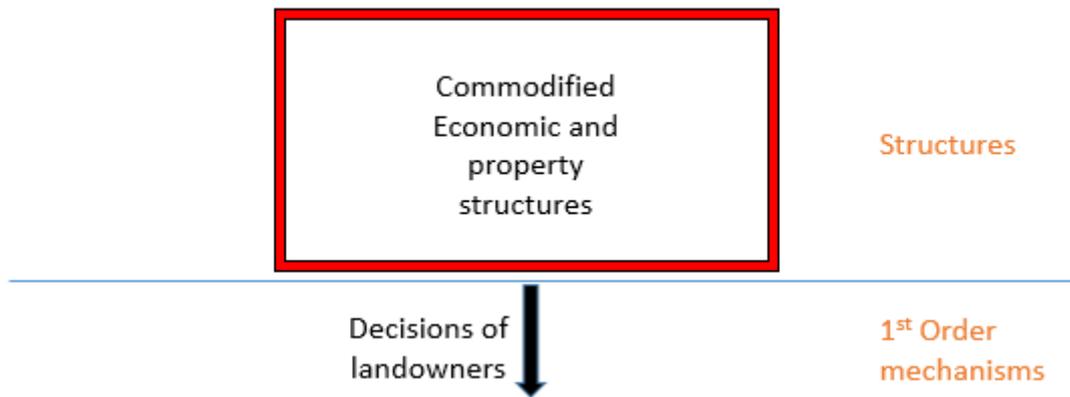
commodification of the wind (*Model 3* below). The following section traces out the mechanisms through which these structures exert their powers.



**Model 3.** Market and Property structures underpinning commodification. Source: author

### 5.3 Social Consequences of Commodification

Just as processes of commodification vary, so too do the consequences. **Here I begin to answer RQ2: What are the social consequences of the wind being commodified?** As commodities are subjected to the logic of the market they are viewed primarily in terms of their commodity price set by the laws of supply and demand. The commodity is “robbed of the protective covering of cultural institutions” (Polanyi, 2001, p. 76). This exposure often results in damage to or degradation of that which has been commodified, as its treatment is primarily governed by the market’s compulsion to maximise profits from it: “Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed” (Polanyi, 2001, p. 76). The deforestation of the Amazon is a well-known example of what happens “when these essential sources of wealth are bought and sold just like any other commodity in the interest of maximizing profit and reducing costs, being subject to the same kind of calculation” (Hart & Hann, 2009, p. 78). This ‘commodity calculation’ is a way of seeing the wind which results in decisions that I consider 1<sup>st</sup> order mechanisms (see *Model 4*). Landowners can make insulated and profit-maximising decisions by virtue of the market and economic structure which underpin the processes of commodification. This does not mean other factors never impact decisions (there are always other mechanisms), but it can be said to represent a tendency. Unlike the Amazon rainforest, though, there are no significant direct effects upon the wind by its commodification. Apart from some local ‘wake effect’ perturbations, the wind is inexhaustible (Kaffine & Worley, 2010; Marvel et al., 2013). So, what are the (primary) consequences of the commodification of wind? **(RQ2)**.



**Model 4.** Landowners decisions structured by commodity relations. Source: author

### 5.3.1 Economic Inequality

The technological dependence of wind energy on land means that the commodity price given to it in the form of royalties flows to those who already own land. The sub-processes of **privatisation and valuation** are most relevant here. Additionally, dealing with one landowner is likely much simpler than dealing with several, which means developers might tend towards larger landowners. This could exacerbate existing or create new economic inequalities within communities. One Canadian study reported that wealthy landowners were increasing the wealth gap relative to others by way of extracting a commodity price of wind (Walker, Baxter, & Ouellette, 2014). A study from Kansas had similar findings (Weber, Brown & Pender, 2013). Those who already possess wealth in the form of landed property are benefitting from the deployment of wind energy technology, simply due to their ownership over certain parts of the Earth. Based on a study in Texas, Brannstrom et al (2015, p. 1185) refer to this uneven distribution of income as a “royalty paradox” which stems from the “property advantage”: most people support wind energy generation yet only a few are benefitting from it. This is not as much of a problem in sparsely populated areas with large landowners. However, in many places, the ‘costs’ of the construction of wind turbines are spread across the community (these costs include visual landscape deterioration, which I deal with in the next section). My fieldwork on the Aran Islands illustrated this paradox well. The co-operative needed to overcome a ‘healthy suspicion’ amongst the local community that they were not conniving to let in developers and extract the commodity price:

*“It’s not just for somebody to get rich, which people resent, you know? I mean, even now there’d be a healthy suspicion among islanders that some of our committee would have a*

*hidden agenda: 'Ah, they have a piece of land, they want to get turbines up on their land and they're going to be making money.'*" - Paul

This quote demonstrates three things: Firstly, it demonstrates the dominant mindset which immediately suspects wind energy development as being a way for landowners to make money, because this is perceived as normal. Secondly, from an instrumental perspective, it illustrates that challenging the distribution of benefits is important from a social acceptance point of view. People "resent" others getting rich (Interview with Paul). This echoes other literature on social acceptance which finds perceived distributional justice to be key to social acceptance (Gross, 2007). Finally, these considerations of distributional fairness are substantively important questions that should be asked about any decarbonisation trajectories, for the sake of fairness itself.

### **5.3.2 Deterioration of Cultural Landscape**

While the commodification of the wind does not have any serious direct effects upon the wind itself, it can produce side-effects, commonly known as 'externalities' in economics. One of the most prominent of these are visual externalities in the landscape. The landscape is intrinsically connected to people's lived experiences in their places. "The physical environment [is] a reflection of the political landscape" (Olwig, 2002, p. 21), or a "concretization of social relations" (Mitchell, 2008, p. 45). The landscape is intertwined with the 'lifeways' of the people who occupy and co-create it (Buttimer, 2001). The relation between people and their landscape can be profound. In their classic *Reading the Irish Landscape* Mitchell and Ryan speculate:

*"We like its current appearance, perhaps because it is entirely the work of our immediate predecessors. If there was a modern resurrection of some of our earlier ancestors, who lie at rest in the Bronze Age cemeteries of 3500 years ago, they would be amazed by and completely lost in today's landscape"* (Mitchell & Ryan, 1997, p. 363).

Not only does the landscape reflect social relations, it also plays a part in cultural reproduction and is therefore a crucial constituent of community (Olwig, 2013). The physical nature of wind energy technology means that it inevitably intrudes in the landscape. The top-down, 'parcelled' perspective of land discussed in Hägerstrand's (2001) work earlier means those top-down, bureaucratic, parcelled 'mindscapes' are also imprinted in the landscape (Buttimer, 2001, p. 21). When landowners make **private** decisions about wind energy investment they are severed from the mindscapes of those in the community. The commodification of wind results in the **individuation** of the wind from its context in the landscape. This means the construction of wind turbines is not ruled

by shared cultural rules, norms or expectations about the maintenance of the landscape but is instead dominated by considerations of individual profitability due to the monetary **valuation** of the wind. In other words, the commodification of the wind robs the landscape of its cultural protection. This threatens cultural reproduction and areas of cultural heritage (whether formally recognised or not).

My time on the Aran Islands revealed a strong aversion to this form of commodification:

*“One of the biggest mistakes they’ve made all over the country is big hedge funds and pension funds investing [in wind power]. And it’s totally bloody, its faceless finance. And they don’t seem to have any regard for local people’s sensitivities” - Simon*

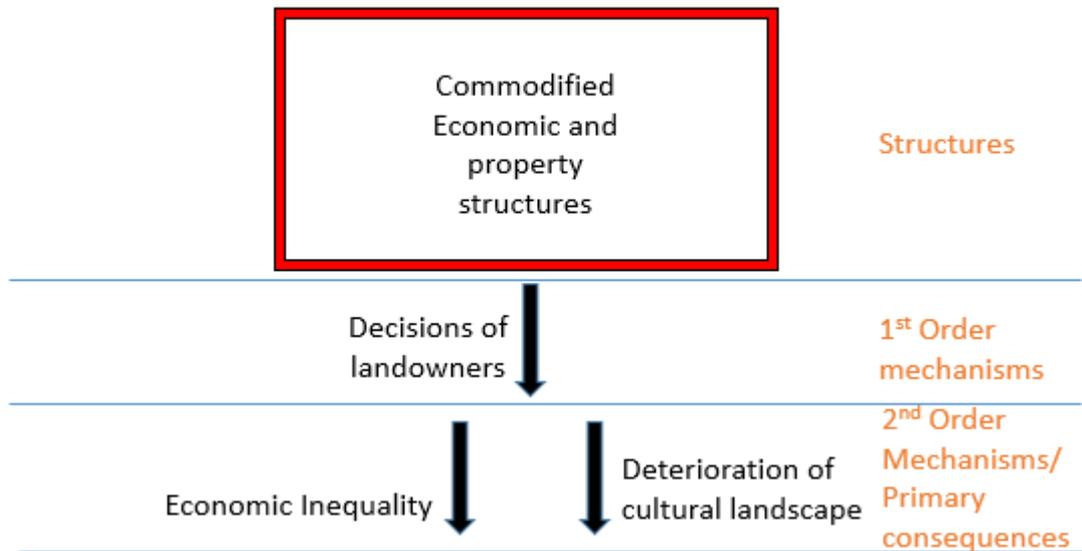
*“Allowing these massive companies to come in and just profit, and destroy the landscape, and walk all over people is wrong. It’s wrong, it’s so wrong. But, again, its capitalism. This whole idea of ‘we’ll just build it and to hell with you’ - that’s wrong. I think the voice of the people needs to be very clearly heard” - Ruaidhrí*

These quotes demonstrate the fear that commodification will lead to visual or cultural landscape degradation. Indeed, visual landscape impact has been repeatedly found to be a significant problem with wind turbines (Jones & Eiser, 2010; Warren & McFadyen, 2010; Wolsink, 2000). Again, as with economic inequality, better management of this issue could instrumentally build ‘social acceptance’, while also being worthwhile in its own right.

Both economic inequality and cultural landscape degradation are the primary consequences of the 1<sup>st</sup> order mechanism (landowner’s decision)<sup>6</sup> (*Model 5*). In the next section I show how these become 2<sup>nd</sup> order mechanisms in themselves as they lead to the degradation of community, which is the main concern of this thesis.

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<sup>6</sup> I do not claim that these are the only consequences of commodification. There could be others of relevance such as efficiency of resource use (see Appendix B). For the scope of this thesis I refine my analysis to the two mentioned.

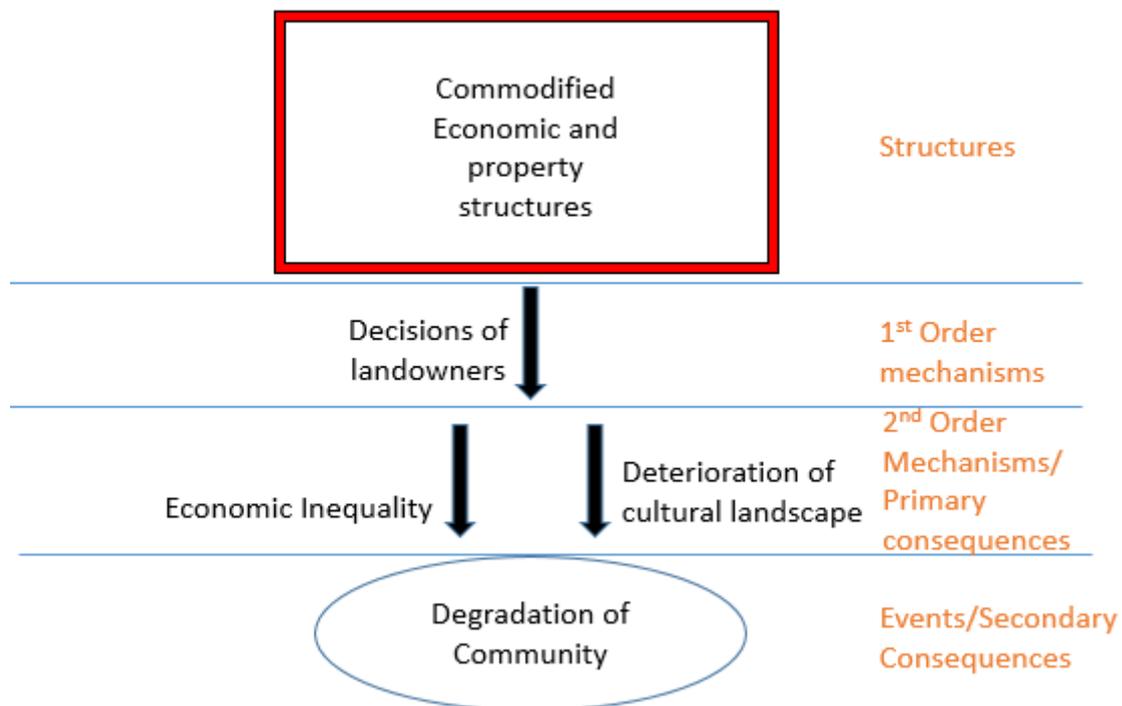


**Model 5.** Primary consequences of commodification. Source: author

#### 5.4 Degradation of Community

Having established two of the primary consequences (economic inequality and landscape degradation) we can now look at the knock-on effects on community ties, or social capital. As mentioned in Section 2.3 it is at this level that the empiricist might have based their analysis. As we have seen in the foregoing, critical realism has allowed me to trace deeper explanations for why these primary consequences come about at all in the first place. As we have seen, the combined processes of **privatisation**, **individuation** and **valuation** mean that landowners’ decisions become a private matter. It is their patch of wind, with which they can do what they want. It is also a valuable commodity they can exploit to increase their income stream. In a sense, the wind in a community comes to be managed in an insulated and parcelled manner, with landowners responding to the price incentive as opposed to norms of reciprocity or acknowledgement of others in their community. As we have seen, this way of managing the wind results in economic inequality and landscape degradation. The exacerbation of wealth gaps poses a threat to sense of community and social capital (Weber, Brown & Pender, 2013). As mentioned earlier, people “resent” others becoming rich (Interview with Paul). Indeed, economic inequality and social capital have been found to be negatively correlated (Delhey & Newton, 2005; Ioakimidis & Heijke, 2016). Similar results can be felt when decisions that impact the landscape are made in isolation from the broader community who inhabit it: “This landscape of injustice, logical as it is in terms of crisis-laden capital flows, is a

key component of society's 'degeneration'" (Mitchell, 2003, p. 793). The broader social network is severed from management of the wind as it becomes a matter for private landowners, with others feeling helpless. This network begins to generate distrust, resentment and begrudgery, all **undermining social capital**. This is the notion of the disembedded economy found in Polanyi which, as it expands, corrodes the social relations in which it is enmeshed (Adaman et al., 2003). We can then understand the phrase: "a market economy can exist only in a market society" as more and more social relations take on instrumental form (Polanyi, 2001, p. 74).



**Model 6.** The commodification of the wind and its consequences. Source: author

The Aran energy co-operative members were acutely sensitive of the inherent value of community and the threat a wind turbine could potentially pose:

*"We can't afford to put a wind farm up here that would split the island. We can't afford to create division on the island by putting it up. I mean, fine, if there's a small handful against it we'll have to live with that. But if there's anything like 50% or even a substantial portion of the community I think we wouldn't go ahead with it." - Paul*

The deployment of wind energy technologies can harm the social fabric if decisions are carried out in an isolated and 'disembedded' manner. The commodification of wind leads to decisions being taken in this manner. We have now made the **logical connection between commodification and the degradation of community ties**, thus answering **RQ2** (see *Model 6*). While others have noted the

importance of social capital and trust for gaining social acceptance (Aitken, 2010; Walker, Devine-Wright, Hunter, High, & Evans, 2010), my concern is primarily with the erosion of community *in itself*. By drawing this connection to deeper social structures, it allows the possibility to de-naturalise these consequences. This is the process of de-reification.

## 6 The Fulcrum: De-reification

As I explained in Section 5.2.4 there is a fourth sub-process of commodification of significance here: **displacement** (Castree, 2003). Displacement is important not because it contributes to social degradation directly, but because it shrouds and naturalises the other sub-processes of commodification and their underlying structures. In other words, commodity relations become **reified** and ossified. They appear natural and necessary as opposed to social and contingent. This process of reification was not intentional but rather happened somewhat automatically. The technological fix discourse that often accompanies renewable energy technologies downplays the role social relations play in their deployment. This only serves to reproduce existing hegemonic ideologies. In Ireland, for example, the ideological sanctity of private land ownership is reproduced and extended to the wind. This ideology is dramatized in John B. Keane's play, *The Field* (1965); in which, protagonist and tenant farmer, 'Bull McCabe', feeling entitled to ownership of the field after the death of the landowner, murders an English speculator who wants to buy it for industrial purposes. Indeed, a huge proportion of rural Irish land is private farmland, to which public access is limited at best, in contrast with the Swedish *allmansrätten* (Aalen, Whelan, & Stout, 2011). This ideological sense of land ownership has politico-historical origins stemming from the Irish Land League and the Fenian Movement (Moody, 1984). These movements were based on tenant farmers' rights to the land which they often rented land from absentee British colonial landlords (Moody, 1984). This shows that commodification does not entail active deceit by landowners but rather a somewhat automatic activation of engrained ideologies and social relations.

Through the foregoing analysis I have employed "cognitive explanatory critique" to identify and demystify the sub-processes of commodification, in particular **privatisation, valuation and individuation** (Sayer, 2000, p. 159). We can begin to ask: Why does one person get to accrue the economic value of the wind if they have done nothing except own a piece of land? Why can one person make a decision that affects everyone? Does it have to be this way? These are basic political questions at the heart of the energy transition but which are often overlooked. Asking them enables us to see that the disintegration of community is not a necessary result of the deployment of wind technology, but is rather contingent upon engrained social relations. Understanding the contingency of these processes is important because otherwise the "needs-based critique" of the social consequences might lead one to consider them inevitable (Sayer, 2000, p. 159). My point here is that taking social consequences seriously does not necessitate rejection of technologies, nor a recourse to a cultural conservatism that yearns for a return to the "four green fields" of old Ireland (Mitchell & Ryan, 1997, p. 364). Instead, it should compel us to investigate alternative social

arrangements through which technology can be deployed. Critique in itself is futile without an alternative (Sayer, 2000). Recognising this, in the following chapter I begin to construct a model for an alternative wind management regime which resists the processes of commodification. Commodification is a matter of degree rather than kind. The wind can be said to be commodified to the extent to which its use is governed by the market. As we have seen, the way the market asserts its power on landowners is through the private accrual of extra income (or commodity price) which structures the decisions they make. Thus, common ownership represents a structural shift in property rights which can mitigate the consequences of commodification.

## 7 The Commons Alternative

In Polanyi's (2001) analysis the market is not left to expand and erode the social and natural foundations on which it depends unchecked. Recurrent 'double movements' resist its expansion. Oftentimes these take the form of government regulations which are somewhat ad hoc in nature; failing to fundamentally question the commodification of society and nature. This ad hoc nature lies behind the statement that "laissez-faire was planned; planning was not" (Polanyi, 2001, p. 147). Civil society offers another possibility for resisting the market such as through social movements. Intellectually, growing literature on the commons morally and pragmatically questions the process of commodification. My proposed solution is a form of 'new commons' (explained in Section 7.2), the management of which can still draw on some of Ostrom's original design principles. In the following two sections I therefore describe these two forms of commons (new and old) and explain their utility for resisting the sub-processes of commodification of wind.

### 7.1 Ostrom's Common Pool Resources

'Commons' have been used to refer to open-access public goods (such as air) as well as those shared by certain groups (e.g. fisheries). In her seminal *Governing the Commons* (2015), Elinor Ostrom argues that these two types of goods share the quality of being 'non-excludable' (i.e. cannot easily exclude others from their use) but distinguishes between them on the basis of degree of 'subtractability'<sup>7</sup>. Public goods are relatively non-subtractable because their use does not deprive someone else from the use of that same good. In contrast, what Ostrom refers to as Common Pool Resources (CPRs) are defined by their relative subtractability. If one fisherman catches a fish this subtracts from the benefit others can derive from the CPR system<sup>8</sup>. Garrett Hardin's (1968) "thesis of the tragedy of the commons fails to distinguish between common property as a theoretical condition in which there are no relevant institutions (open access) and common property as a social institution (the commons)" (McCay & Acheson, 1996, cited by Bollier 2012, p.19). Ostrom's rebuttal of Hardin's thesis showed that people can and do self-organise, creating functioning social institutions to manage CPRs. These social institutions operate through locally established rules and norms that promote cooperation. This overlaps with Polanyi's statement that the "protective covering of cultural institutions" is stripped through the process of commodification (Polanyi, 2001, p. 76). Ostrom aimed to "shatter the convictions of many policy analysts that the *only* way to solve

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<sup>7</sup> The introduction of 'degrees' of subtractability was also an innovation by Ostrom which was an analytical improvement upon the fixed categories of before.

<sup>8</sup> The separation of resource system (e.g. fishery) and resource units (e.g. a fish) is an important one to make to clarify this analytical distinction (Ostrom, 2015).

CPR problems is for external authorities to impose full private property rights or centralized regulation” (Ostrom, 2015, p. 182). She also identified trust and social capital as crucial factors for the functioning of collective management institutions, an important point I return to later (Ostrom, 2009, 2015).

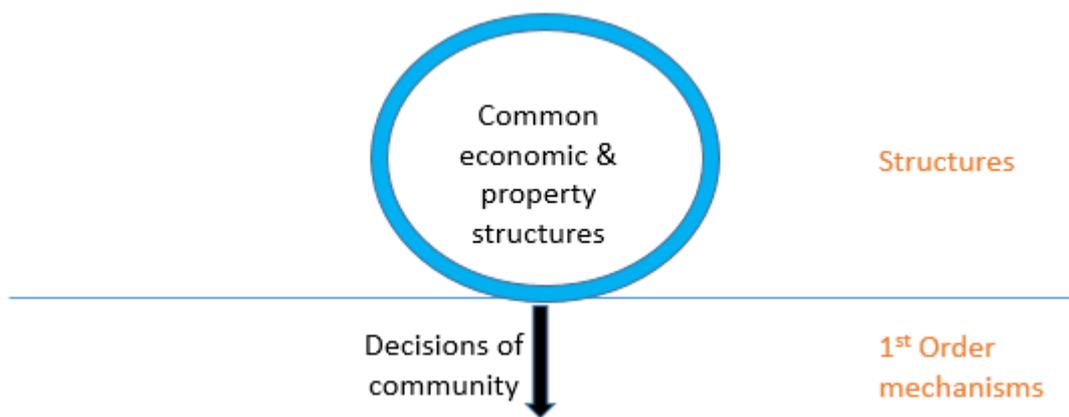
## **7.2 The ‘New Commons’**

The concept of the commons has expanded beyond Ostrom’s CPR understanding to encompass things as diverse as knowledge, the internet, neighbourhoods, biodiversity and landscapes (Gepts, 2004; Hess & Ostrom, 2007; Hess, 2008; Olwig, 2013). Hess and Ostrom refer to this recent explosion as the ‘new commons’, in contrast with the traditional CPR scenario (Hess & Ostrom, 2007; Hess, 2008). For some it has become an antithesis concept to commodification and privatisation, or a ‘counterhegemonic project’ (Arvanitakis, 2006; Bakker, 2007; Hess, 2008; McCarthy, 2005). For example, the commodification of culture has initiated claims that the ‘cultural commons’ being under threat (Hardt & Negri, 2009; Harvey, 2011). In its expansion, the concept has needed to grow more flexible to encompass all of these new commons, with some authors arguing it should *not* be defined (Ricoverti, 2013, cited by Parascandolo & Tanca, 2015). However, it is important to maintain some definition for analytical clarity. While many of these new commons can no longer be described as ‘subtractable’, “the unifying thread in all commons resources is that they are jointly used, managed by groups of varying sizes and interests” (Hess & Ostrom, 2007, p.5). In the original terminology of CPR management they are ‘non-excludable’. The level of excludability (or accessibility) is not inherent in things, though, but it is instead a function of technology and, more importantly, social relations. In other words, “common goods don’t simply exist - they are created” (Helfrich, 2012, Part 1, Ch.11 title). This ultimately political centrality of sharing can be understood as the linchpin that counterposes the commons to commodification which, as we have seen, oftentimes entails private and exclusive access. In the following section I will elaborate how the concept of the commons applied to wind might avoid the social consequences of commodification.

## **7.3 Wind as a Commons**

Some new commons “evolve from new technologies that have enabled the capture of previously uncapturable public goods” or are “natural resources for which there are new uses” (Hess, 2008, p.4). I contend that the wind is one of these potential ‘new commons’ if it is captured and governed by collective institutions. Alternatively, we have seen, it can be captured by processes of commodification which tend to privatise and exclude the use of the wind from others.

Common governance of the wind provides an alternative to the governing hand of the market when the wind is treated as a commodity by private landowners. Instead of it being managed in parcels, the wind is under common ownership. This means that decisions about its use are made collectively as opposed to one landowner exercising total control. This negates the sub-process of **privatisation**: representing a shift in property structure. Common ownership is tightly connected to the negation of **individuation** as the broader community who participate and reside in the cultural landscape will be able to identify suitable and unsuitable locations in terms of visual and cultural impact. Finally, the wind might still be ascribed some economic value, so totally resisting **valuation** is unlikely. However, the process of valuation looks quite different in the sense that it is not done through the private accrual of royalties. In this way we can see that the use of the wind is governed by the market to a much lesser extent. Instead, the decision (1<sup>st</sup> order mechanism) has been ‘re-embedded’ in society (Adaman et al., 2003). For this reason and for the sake of simplicity I depict a shift in not only property structure but also economic structure in *Model 7* below. However, the economic (market) structure could otherwise have been depicted as a ‘condition’. This is the answer to **RQ3: How does commoning resist the sub-processes of commodification?**



**Model 7.** The re-embedded, collective governance of the wind. Source: author

If common management of the wind offers potential to resist commodification, then what are viable institutional models which could embody this? There has been a sharp increase in community renewable energy projects globally in recent years, many of them in Europe (REN21, 2016). Community wind energy has been used to label a large variety of different models. It is important to distinguish between these, to provisionally identify which one can successfully negate the social

consequences of commodification. Appendix A contains an explanation of the analysis completed to distinguish between three different forms of community energy. These three main types of community energy are by no means exhaustive and it is important to note that no model is perfect. Indeed, there are numerous possible configurations of wind energy development that exist somewhere along the commodity-commons spectrum. Appendix A is more illustrative to show how different models might have different relationships with the wind. This basic analysis was useful in guiding my choice between different potential cases in Ireland. After an online search, reviewing documents (e.g. Comhar Sustainable Development Council [SDC] & Trinity College Dublin [TCD], 2011; National Economic and Social Council, 2014) and personal inquiry, I came to the conclusion that Aran Islands Energy Co-op was a suitable case. The case of Aran reveals a logic that is counterposed to the logic of commodification, and thus serves as a good example of how common management might avoid the deleterious consequences described in Chapter 5. The following chapter then provides an answer to **RQ4**.

## **8 The Community Co-op & Its Consequences**

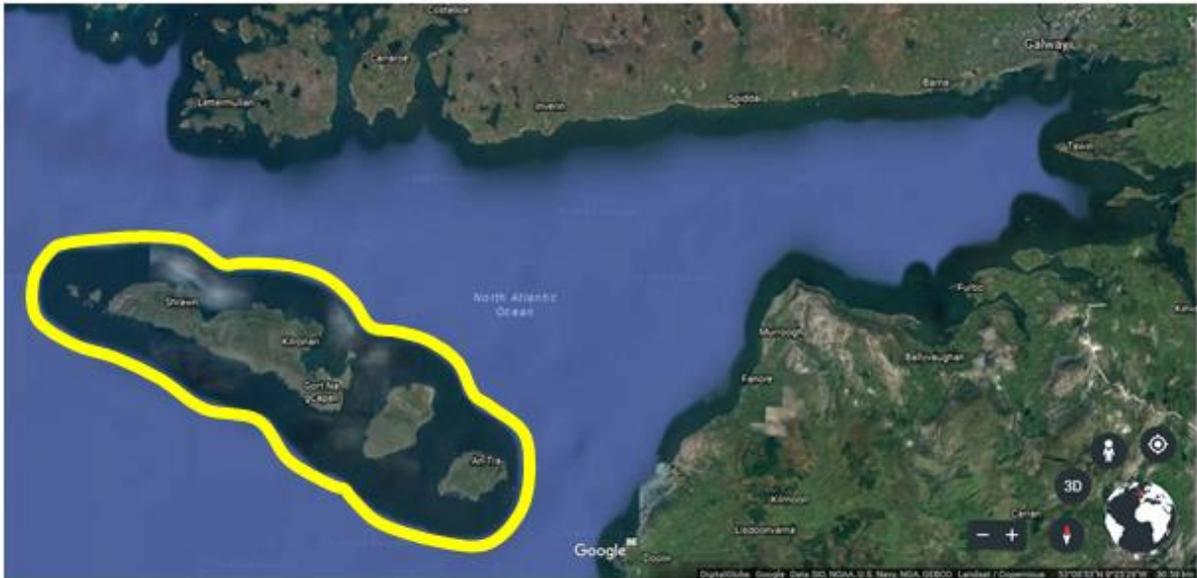
### **8.1 The Case**

#### ***8.1.1 Ireland***

Despite lagging behind its EU emissions targets, Ireland's wind energy sector has seen a rapid acceleration in recent years and Ireland now has one of the highest shares of wind energy per capita globally (Climate Change Advisory Council, 2016; Department of Communications, Climate Action and the Environment [DCCA], 2017; Eirgrid, 2016; Scheer, Clancy & Gaffney, 2016). Climate change mitigation in Ireland is only recently emerging in the public consciousness and is dominated by a technocratic, ecological modernization discourse (Fox & Rau, 2016). It is somewhat distant from the people on the ground and "citizen-centred debate" has been marginalised by the major media outlets (Fox & Rau, 2016, p. 1). The approach taken to renewable energy development has reflected this, being led by commercially-focussed public and private developers (McCabe, 2015), with local tensions bubbling over in recent years due to feelings of lacking recognition (Doyle, 2014; Fleming, 2014; Hand, 2015). However, there has been a recent shift, rhetorically at least: The Irish Government's recent White Paper on Energy advocated for 'energy citizens' to take the lead in driving Ireland's low carbon transition, with community energy at the helm (Department of Communications, Climate Action and the Environment [DCCA], 2015). As the recent influx of commercial wind energy investments is met with a popular shift towards community energy, Ireland is an ideal location to illustrate and investigate my research questions.

#### ***8.1.2 The Community Co-operative***

There have been several community-led initiatives in Ireland to date ranging from retrofitting schemes to community windfarms (Comhar SDC & TCD, 2011). As I explain in Appendix A, I chose the Aran Islands Energy Co-op based on its inclusive and democratic nature.



**Image 4.** The three islands, from North-West to South-East: Inis Mór, Inis Meáin and Inis Óírr at the entrance to Galway Bay. Source: author, adapted from Google Earth, n.d.

As depicted in *Image 4*, the Aran islands are three islands located in the North Atlantic at the entrance to Galway bay off the Irish West coast. Comharchumann Fuinneamh Oileáin Arainn (Aran Islands Energy Co-Op) was officially established in 2012, aiming for energy self-sufficiency and carbon neutrality on all three islands by 2022 (Aran Islands Energy Co-op, 2016). The islands are an ideal location for such ambitions because all energy consists of imported fuels which are easily calculated and converted into CO<sub>2</sub>e (Áras Éanna, 2017). The co-operative collaborates extensively with the Sustainable Energy Authority of Ireland (SEAI), other state bodies, private organisations, research institutes and other communities. To date, the co-op has engaged mostly in retrofitting and energy efficiency measures for houses and community buildings on the islands, drawing on funds from the SEAI's Better Energy Communities Programme (Siggins, 2014). Thus far, over half of the buildings on the islands have had energy-related refurbishment, resulting in an approximate 20% reduction in imported heating fuels (Brennan, 2015)

Renewable energy generation on the islands has had a rocky history: An early wind turbine on Inis Óírr blew over and three wind turbines that existed on Inis Meáin were taken down in recent years due to governance problems with that island's co-op (O'Sullivan, 2012). Despite this unfortunate precedent, the co-op is considering various renewable options. Several feasibility studies (for efficiency and generation) and test projects (e.g. electric cars) have been done (Hamilton & Kenny, 2014; Pleijel, 2015). Some solar PV has also been installed. However, the greatest and most available resource on the islands is the wind (Denny & Keane, 2013). While one study found no potential for wind energy generation due to the restrictive SAC (Special Area of Conservation) and NHA (Natural

heritage Area) zoning rules (Denny & Keane, 2013), the co-op is pursuing this option nonetheless. To match projected electricity demands of the island, 2.76 MW is required (Hamilton & Kenny, 2014). This is equivalent to three small or one larger turbine (Hamilton & Kenny, 2014).

Lifetime membership in the co-op is open to all Aran residents for €100<sup>9</sup>. The co-operative want as many residents as possible (if not all) to sign up. They allow piecemeal payment of the fee to reduce exclusion. The fee is nominal and goes towards general administrative costs. It buys membership as opposed to a financial share with dividends. Indeed, the founding guidelines of the co-operative stipulate that any future profits will be re-invested in future community projects – there are no individual dividends. It works instead on the principle of a social dividend. What membership does offer is voting rights to democratically elect the twelve-person committee. The committee is the governing body who deliberate and make decisions for most minor matters. For bigger issues (like wind turbines) there is broader public deliberation (including non-members) and ultimately a public vote. The Aran co-operative want to ensure any future harvesting of the wind would be on the terms of the whole community and that the use of the wind would benefit all residents. If “naming a commons as a commons is the first step toward protecting and reclaiming resources” (Bollier, 2012, p.5), then this quote supports my contention that the Aran community co-op is a commons:

*“This is our energy, this is our place; we’re taking our wind which is blowing over our land, and is supplying our community.” - Gearóid*

The following section traces the primary consequences of the collective decisions stemming from this common ownership (which is a 1<sup>st</sup> order mechanism). This will provide an answer to **RQ4: What are the social consequences of common management?**

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<sup>9</sup> The information in this paragraph was obtained through personal communication and internal co-op documents which I was given access to.

## 8.2 Consequences of the Community Co-operative Model

### 8.2.1 Economic Inequality Lessened

In the co-op, wind is not seen as a private commodity but is rather re-embedded in the community of common owners. When they view it from this perspective, landowners are less likely to try to maximise individual commodity prices from *their wind*. Rather the harvesting of wind is seen as a collective project that should benefit everyone, and not something to be taken and sold for profit. The following response to the question of compensation for landowners illustrates this well:

*“They would [be given compensation], that would be the plan. Now we’ve had quite a number of landowners on the few islands offering land to us. [I’m] not saying they don’t want to be paid but saying: “my land is there and if you want to put turbines on it, I’d be happy if you did”. And I don’t think they’re being just greedy, [...] just thinking: “I’ll get loads of money out of this”. I think they really are supportive.” - Paul*

The amount of compensation will be negotiated once the final site location has been decided upon on the Aran Islands. The fact that this is an intra-community process means the distribution will likely be far more egalitarian. Indeed, it is possible that compensation for the landowners could be valued purely based on productivity lost. Even if individual landowners do want to maximise the commodity price obtained, the amount they can extract is mediated within the community, thus ensuring some form of local regulation.

It should be noted that the distribution of commodity price is not the same as the distribution of final revenues from the sale of the electricity. The commercial model sees one landowner extracting the price of the commodity, while the external developer pockets the rest. In the Aran co-op, any future revenue from the sale of electricity will be re-invested in the co-operative coffers to be used on community projects or future investments. While this is technically separate from the distribution of commodity price (i.e. ‘rent’ on the land), it is important to consider, particularly since these potential revenues would likely be greater than the commodity price of the wind. Indeed, the potential benefits for the community was a common theme emerging:

*“We could have a swimming pool, say, for the kids in the wintertime” – Brendan*

*“Any funding at all that can go back into the community is always a big thing because football teams and handball teams, sports clubs and community halls are always crying out for money”  
- Mary*

### **8.2.2 Cultural Landscape Protected**

The commons resists individuation because economic decisions about wind energy investment are ‘re-embedded’ in society (Adaman et al., 2003). Patrick Bresnihan (2016) talks about the ‘more-than-human’ commons as a way of seeing the world that resists commodification, in particular the process of individuation. He describes the fishermen he studied in Castletownbere in southwest Ireland as deeply enmeshed in relations with the fish they caught and the natural world they were part of. They did not see the fish as an individuated thing, separate from the sea “The language of the commons is, first, an instrument for reorienting people’s perceptions and understanding” (Bollier, 2016, p.9): through collective management of the wind, decisions made about its harvesting are not mentally individuated and severed from the contextual landscape in which ‘patches’ of wind are situated. Locals are more likely to internalise shared norms than non-local developers (Ostrom, 2015).

The cultural significance of the Aran landscape cannot be understated (see *Images 5 and 6*). There are 27 national monuments and over 600 recorded landmarks on Inis Mór alone (Ó’Maolidhia, 1998). Books have been written about the islands, including the well-known *Stones of Aran: Pilgrimage* (1986) by Tim Robinson. With 125,000 visitors per annum to the prehistoric hillfort *Dún Aonghasa* (Fáilte Ireland, 2015), it is not surprising that locals told me that most of the 900 islanders on Inis Mór depend on tourism in some form or other.



**Image 5.** The southern cliffs of Inis Mór viewed from ‘The Black Fort’ (Dún Dúchathair). Source: author



**Image 6.** Typical smallholdings enclosed with stone walls on the relatively fertile northern side of the Inis Mór.  
Source: author

Many of the people I met on the islands were deeply connected to the landscape. Local norms that governed the landscape were perceptible on many occasions during my time on the islands, including one memorable discussion with an 82-year-old man who envisioned and named all the different places on Inis Mór and why they would or would not be suitable for a wind turbine visually and culturally. One committee member admitted:

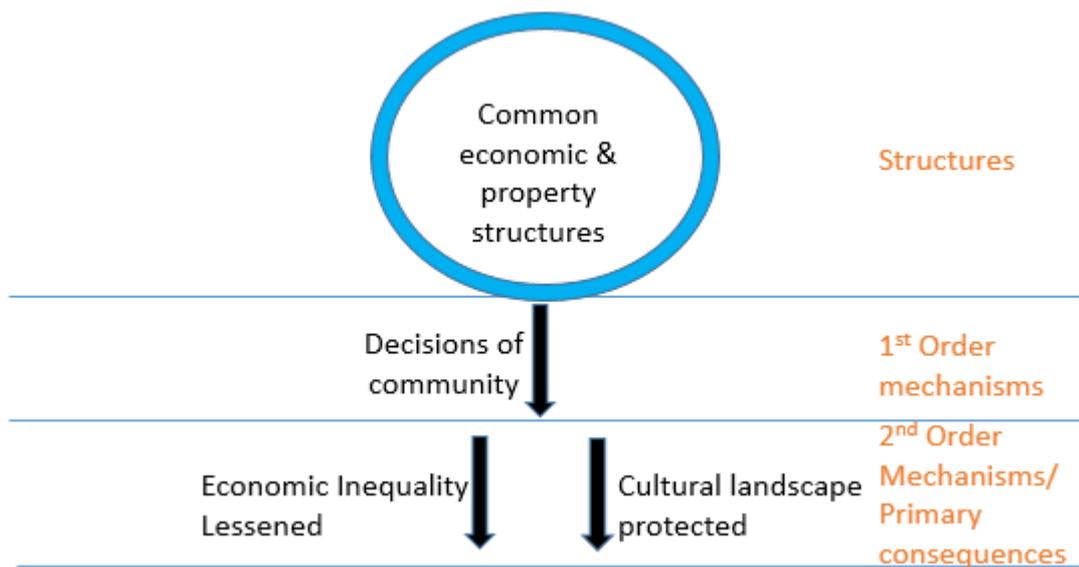
*“I still find turbines a little bit difficult to look at. Now I love the idea, don’t get me wrong. But there are places in Aran, if I was up in the wilds walking and if I came across a turbine, I’d be saying to myself ‘what did we do?’. So I’m not 100% . Like, it hurts me, it has the two points in my own soul that it pulls on.” - Gearóid*

This illustrates the intimate connection between people and landscape I spoke about in Section 5.3.2. Perhaps the most striking anecdote was that of the first proposed turbine site on the islands at a public meeting. Several interviewees described how locals reacted fiercely, banding in support of particularly aggrieved locals who would be most severely affected by the potential turbine. This represented an internalisation of local norms about how the landscape should be. These were subsequently formalised into ground-rules for any future turbines (Interview with Mary):

1. Turbine(s) must not be on a tourist route

2. Turbine(s) must not obstruct the primary view from somebody's house
3. Turbine(s) must be at least 500m from a home
4. Turbine(s) must not spoil the visual beauty of the island

The adoption of these rules serves as protection for the cultural landscape. There are also discussions about the aesthetic benefits of three smaller turbines instead of one bigger, more efficient one (I discuss this trade-off with efficiency in Appendix B). I have now shown how the collective decision mechanism can spread economic gains more equally throughout the community as well as protect local cultural landscape heritage (primary consequences in *Model 8* below). By re-embedding the economic decision in society, it makes economic equality and landscape social matters. The next section deals with the secondary consequences on community ties.



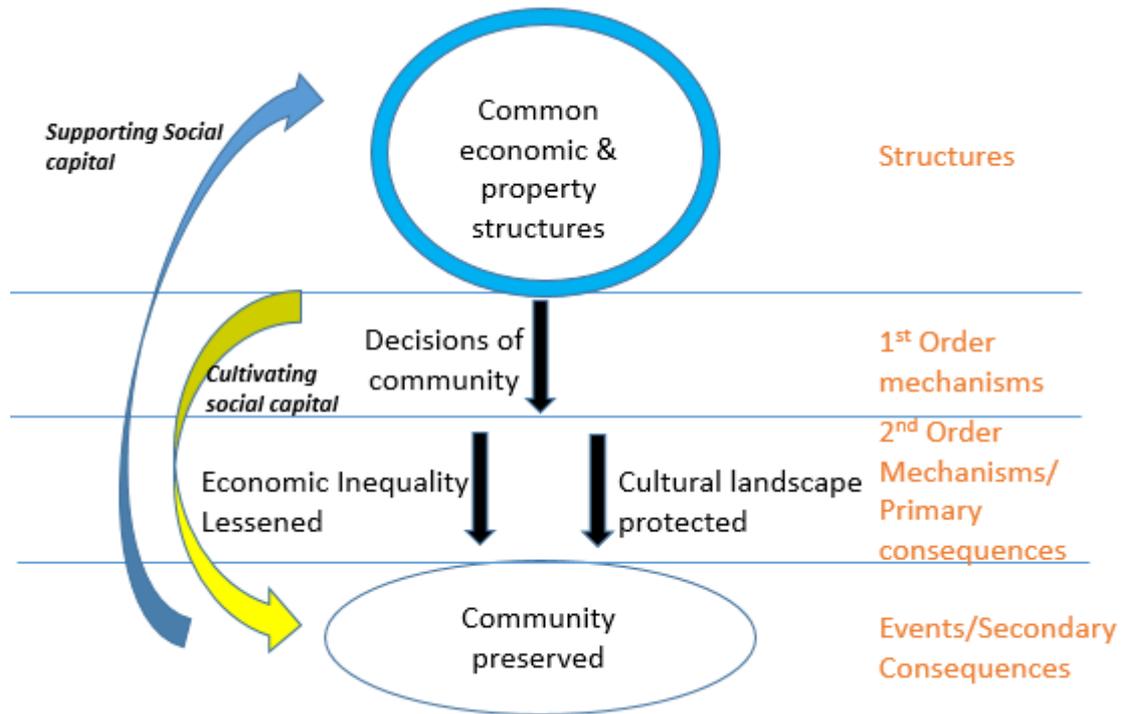
**Model 8.** The commons model with 1<sup>st</sup> and 2<sup>nd</sup> order mechanisms. Source: author

### 8.3 The Role of Community

The 2<sup>nd</sup> order mechanisms in the form of reduced inequality and protection of the cultural landscape preserve social capital because the decisions have been taken collectively and are thus less likely to tread on any social norms or the needs of others. Indeed, as mentioned in Section 5.4, the co-op members were acutely aware that their decision would need to be one that would not “split the island” (Interview with Paul). These are the simple mechanisms which preserve social capital. However, my research revealed that there are other processes at work, too.

As mentioned before, Ostrom identified trust and social capital as crucial elements for commons. In particular, when setting up an institutions for collective action “most appropriators share

generalized norms of reciprocity and trust that can be used as initial social capital” (Ostrom, 2015, p. 211). In other words, Ostrom recognises the importance of a basis of *primary* social capital for collective management institutions to function (Donati, 2014). This bedrock of sociability can then be formalised into transparent rules such as those of the Aran co-op. The supporting role of pre-existing *primary* social capital can be seen in Model 9.



**Model 9.** The commons model of collective wind management. Source: author



**Image 7.** Aran Bike Hire – the scene of the altercation. Source: author

Those reciprocal relations that build community were everywhere to be seen on the Aran Islands. One example stands out: I went to speak with someone in the local bike rental shop (seen in *Image 7*). He was busy helping another islander replace his car tyre. Once the tyre was fitted and secured, the other man attempted to pay the worker. This was met with

a strong reaction verging on anger at the thought of being paid for the help. These small types of reciprocal actions were plainly visible. Indeed, one co-op committee member informed me that she is not particularly enthusiastic about renewable energy but just wanted to do her bit for the community (Interview with Lisa). Another man gushed about the “level of kinship with my community, my rock” (Interview with Gearóid).

Despite this firm bedrock of reciprocity, the co-op members still had to work hard to generate community trust in the collective institution, including co-ordinating energy efficiency measures for over half of the island’s houses. This involved contacting construction companies, filling out grant forms, coordinating the visit of the companies and bringing them to the relevant houses, all for no individual return. This can be labelled as reciprocal and it increased the social capital of the co-op. There was also a sense that the “Trojan” voluntary work being put in by the committee was beginning to pay off (Interview with Luke), and people were beginning to trust them:

*“When they saw then the good that it was doing - say, for people with fuel poverty and the elderly and the retrofitting of the houses and that - I suppose the proof was in the eating, if you know what I mean? [...] with the work that they’ve done already [...] the vast majority of the community would have trust in them for running it and stuff like that” - Luke*

By acting reciprocally and convincing people that they were not acting purely in self-interest they could cultivate social capital which was crucial for the successful collective management of the wind. This was also desirable in and of itself. One interviewee emphasised how important coming together and acting collectively is:

*“[It] creates an energy, a good energy, a positive energy that brings everyone together, and then theres so many other things that can be done. And we need it, you know, our public hall is falling apart” - Ruaidhrí*

This quote demonstrates the positive feedbacks for the achievement of commons goals that the cultivation of social capital can produce.

In the foregoing, I have shown how collective management of the wind avoids erosion of community ties by re-embedding the economic decision in society. This helps to ensure that economic inequality is restricted and the local cultural landscape is protected. In addition to this, the co-op I studied also cultivated social capital by acting reciprocally and through collective action itself. These are the consequences of collective management and I hereby provide an answer to **RQ4**. While I do not dismiss any of the other models of community energy mentioned in Appendix A, none are likely to

generate as much social capital in the broader community as the co-op model due to the level of inclusiveness it pursues<sup>10</sup>. Through my analysis, I showed how the community co-op model can avoid the negative social consequences of commodification. I therefore propose the community co-op model as a possible alternative management regime for wind which can avoid the degradation of community that we often see when the wind is commodified.

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<sup>10</sup> It is possible that smaller groups of owners could produce social capital within their own group, however I am interested in *primary* social capital within the community at large, and not just within certain groups or organisations, or *secondary* social capital (Donati, 2014).

## 9 Limitations & Avenues for Further Research

As clarified earlier, the subject of my critique of commodification is the commercial model of wind energy whereby developers buy or rent land from private landowners. Other situations such as when the land is public would likely introduce an entirely different dynamic and social outcomes. Additionally, the proposed commons model could be further developed theoretically and tested empirically. The management of 'new commons' like wind is an open question into which I have only begun to dig. As I mention in Chapter 7 and Appendix A, the variety of institutional arrangements to collectively manage the wind is potentially large. While I have identified the co-op model as one that is promising, this is not to say others might not be as proficient at avoiding the degradation of community ties. The nature of complex open systems like society means that we cannot assume this will work in all places, nor at all times. In other words, the co-op model I have presented is not necessarily the best form of community energy.

Furthermore, there are clearly other consequences to be considered when deciding between different models. These include efficiency of resource use and access to finance. The ability of the model to satisfy these requirements could also be another avenue for research. Appendix B provides a theoretical discussion of the potential pros and cons of commons and commodity approaches in terms of efficiency of resource use.

## 10 Not all Problems Need Be Wicked: Concluding Remarks

Without being noticed, the wind has been commodified through commercial wind energy development projects. I have shown how this extension of the market governs use of the wind through the isolated decisions of individual landowners. The social consequences of this culminate in the degradation of community ties. It is out of concern for these consequences that my research was motivated. It is out of recognition of their contingency that I sought alternatives.

The double movement to respond to this era of neoliberal marketisation will be through “the molecular transformation of civil society [...] – small-scale visions of alternatives such as cooperatives, participatory budgeting and universal income grants that challenge, on the one hand, market tyranny and on the other, state regulation” (Burawoy, 2014, p.47-48). Community wind energy co-ops are one such molecular transformation. In Polanyian terms they ‘re-embed’ the economic process in society (Adaman et al., 2003). A Polanyian analysis might lead to a “romanticizing place-based *communitas*; but to show blind faith in [...] local solutions to all problems is to neglect the complexity of society” (Hart & Hann, 2009, p. 77). I have shown how common management of the wind can offer an alternative to its commodification which avoids its negative social consequences. Nevertheless, we should acknowledge that common management can co-exist with other layers of governance like state regulations or market exchange of the electricity produced. Solutions at one level might take on a totally different appearance at another (Harvey, 2011). With requirements like 10% emissions reductions annually (Anderson, 2015), it is likely that significant hierarchical coordination is required to achieve these goals. There is a need to coordinate objectives, progress and facilitate information-sharing across and within levels (in the sense used by Cash et al. (2006)). Indeed, the trend towards local problem-solving has been critiqued in the context of resilience (Walker & Cooper, 2011) and common resource management (Bresnihan, 2016) as being a potential façade for neoliberal reasoning, which diminishes the central role of government at a time when it is most crucial. One Irish study argues that recent decentralisation of Irish spatial planning for wind energy represents an attempted depoliticization of what is an inherently a political transition (González et al., 2016). For these reasons, the recent Irish government’s call for ‘energy citizens’ should be greeted with a healthy dose of caution (DCCAE, 2015). We should recognise the functional heterogeneity and complementarity of existing and possible institutions to achieve our aims. My aim has been to show, though, that we unnecessarily straightjacket ourselves if we do not acknowledge other potential social arrangements.

The energy transition will challenge the very foundations of a social system heavily wedded to fossil fuels (Malm, 2016). The motivation for my research was to consider the social implications of solutions to sustainability problems. This concern was with the impacts on communities in and of themselves, as opposed to merely trying to ameliorate them for the instrumental purpose of overcoming opposition. These social problems can often appear 'wicked' in that they arise from the solving of an environmental sustainability problem like climate change (Jerneck et al., 2011; Wiek et al., 2012). My contribution to sustainability science is to challenge the discourse of ecological modernisation which does not consider the social consequences nor underlying social relations upon which its solutions rest. I have shown that, by examining or de-reifying the deeper social relations that are usually implicitly assumed as constants, we can imagine solutions that can address the social and ecological dimensions of sustainability solutions simultaneously. Asking seemingly strange questions like '*Who owns the wind?*' can be the impetus to put these social relations under the spotlight. Doing this might make wicked problems not appear so wicked after all.

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## 12 Appendices

### Appendix A: Unpacking Different Kinds of Community Energy

Community renewable energy projects are to some degree local and/or participatory (Walker & Devine-Wright, 2008). They can be said to vary in the extent to which they prioritise locally beneficial *outcomes* or local participation in the *process* (Walker & Devine-Wright, 2008). This definition means I exclude commercially-led developments with local investors, which are common in some countries like Germany (Bolinger, 2001).

**Table 1.** Different forms of community energy and their ability to negate the processes of commodification. 'X' represents ability to negate sub-process. Source: author

#	Form of community energy	Privatisation	Individuation	Valuation <sup>11</sup>
1	External developer with community compensation/shares	-	-	-
2	Local landowner(s)	-	-	X
3	Open Co-operative	X	X	X

1. The first broad model of community energy (#1 in *Table 1*) are cases externally led by developers or other organisations but which include community compensation funds, trusts or community shares. These models are generally more 'outcome'-focussed in that communities see some of the benefits. The amount of local control can vary in these processes from being 'token participation' (Arnstein, 1969) to more genuine co-ownership models in which communities direct the process to a greater extent. However, control often ultimately rests with the landowner, meaning the decision is **private**. This means further commodification of the wind is more likely due to the incentive to maximise commodity price **value** obtained and **individuate** the wind from its context. Again, this is not always the case and is more a matter of degree than kind. Another drawback with externally-led schemes like this is that use of the resource is just being handed over to an external agent (even if

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<sup>11</sup> Valuation here represents the commodity value represented in terms of its price. As discussed in Section 5.2.3, this price is reflected in the landowner accruing rental income. The commodity price is not about the sale of the resultantly produced electricity, which can be said to be a 'real' commodity in Polanyian terms.

ownership or control is not), for those to accrue most of the benefits from. It therefore cannot be called a commons. The downfall with this (aside from the extraction of wealth) is that the necessary social capital and trust needed to support a commons are no longer generated (see Section 8.3).

2. Another scenario is an individual landowner erecting their own turbines and selling the electricity to the grid (#2 in *Table 1*). Almost half of the renewable energy in Germany is owned by private individuals and farmers (REN21, 2016, p.136). While this might not represent any extraction of commodity price, it does contain the other elements of commodification in that the landowner(s) has assumed **private** control over the wind and has **individuated** it from the surrounding landscape. Again, all of the benefits accrue to the individual. While a group of landowners pooling their resources could arguably be considered a claim to common property as opposed to privatisation, initiatives like this are still exclusionary based on access to capital or land. These models might also lead to exacerbating wealth inequalities, although this can be mitigated to an extent by compensatory mechanisms. These are normal practice nowadays even with cases of pure commodification.

3. There were over 2800 renewable energy co-operatives in Europe in 2015 (REN21, 2016, p.136). They are generally democratic in structure and work according to the one-member-one-vote rule (REN21, 2016). The community co-operative model (#3 in *Table 1*) I researched on Aran is highly inclusive in that it allows all community members to have a say in the process and asserts much more local control over who does what with the wind. This democratic and inclusive structure resists the idea that the wind is **private** but is instead held in **common**. This local, collective control means that local landowners (who buy in to the common institution) are less likely to perceive the wind that blows over their land as something only to be seen in terms of its **individuated** market **value**, but as something that's harvesting will inevitably influence broader social relations. This model thus holds potential to negate the three sub-processes of commodification and their consequences. It is important to note that the economic value of the wind is still considered in terms of the electricity it can potentially generate. Common ownership does not entail a total decommodification of the wind to return to its open access status of before. Instead, it means its value and governance is no longer determined by the market, but is instead embedded in community relations.

It is important to note that these three categories do not represent an exhaustive list of the various forms community energy can take.

## **Appendix B: Efficiency of Resource Use: Commodification vs Commons**

Efficiency is the hallmark of the market. In neoclassical economic models which perpetuate the idea of an independent, self-regulating market, “social goals beyond economic efficiency are not explicit; economic efficiency is assumed to generate socially desirable conditions by stimulating productivity and limiting waste” (Campling & Havice, 2014, p. 709). Developers will seek to cut costs and maximise profits on each round of investment. The resulting patterns of profit and loss then retrospectively coordinate the next round of investments (Adaman et al., 2003). One of the most important factors for efficiency and profitability is average wind speed (Sustainable Energy Authority of Ireland, 2017). Developers will seek areas with higher average wind speeds to maximise electricity output, and thus profits. Since similar turbines require approximately equal inputs, the efficiency of resource use for each turbine is more or less directly a function of the average wind speed of the final site location. This means the market will push developers towards efficiency.

However, there is something to be said for commons in terms of efficiency too. Mark Fiege shows that the movement of ecological processes across spatially fixed and parcelled private property boundaries can require de facto collective action and commoning to manage those resources (Fiege, 2003, 2005). To maximise the efficiency of resource use (given a scarcity of resources whether that is financial or natural capital), coordination can be beneficial to achieve this goal. Imagine an area with capacity for a wind farm consisting of multiple turbines. Usually, developers will need to negotiate individually with multiple local landowners exercising dominion over their parcels of land. This might create coordination problems for a number of reasons:

Firstly, although wind is geophysically inexhaustible at the global level (Marvel et al., 2013), perturbations or “wake effects” at the local level means that some level of coordination is important when siting multiple turbines to get the maximum average wind speed per turbine (Irish Wind Energy Association [IWEA], 2012; Kaffine & Worley, 2010). Secondly, the construction of wind turbines requires the construction of auxiliary infrastructure such as site access roads and substations. It is more efficient to have wind farms concentrated in one area as opposed to scattered across different locations, depending on the willingness of individual landlords; so that this infrastructure does not need to be built in multiple locations.

Theoretically, then, common management of the wind could improve efficiency. My research on the Aran islands revealed the limitations of this theoretical possibility due to the solidification of landed property relations. In an ideal situation where the solidification of land rights were challengeable, then under collective ownership, the landowner(s) whose land lies beneath the prime location for

wind energy production would no longer have total control over whether turbines are put there. Rather, because the wind is commonly owned it would be a collective decision, and that particular landowner might be forced to accept the decision. There could also be the possibility for compensation for any lost productivity on the land (which is not the same commodity price extracted). However, in reality, while some landowners were coming forth offering their land, thus increasing the spatial investment horizon, the common management of the wind on Aran did not entail a challenging of existing property relations around land. There was a sense that they would have to 'take what they can get' in terms of offers of land, and choose based on that which was available.

Additionally, efficiency was only considered as one of a number of social goals. For example, a feasibility study was done on the islands by an external company. They identified an ideal location in terms of accessibility and wind speed. However, once the site was proposed to the local community by the co-operative it was fiercely rejected based on several reasons including proximity to people's houses, obstructing the visual landscape and location along the main tourist route. Even co-op members themselves were flummoxed by the proposed location. One was indignant that the external consultant – who he referred to as “carpetbaggers”<sup>12</sup> - refused to listen to these local concerns while conducting the feasibility study, and did not take other site proposals seriously. Additionally, at a public meeting I attended in which a new site was proposed, there was discussion over whether three small or one large turbine would be best in terms of visual landscape impact. These examples illustrate how efficiency is certainly not given priority, amongst a number of potentially competing social goals.

Thus, while the “self-regulating market results in an outcome no one willed, oblivious of the human, social, environmental and ecological consequences of its operation” (Adaman et al., 2003, p. 370), the collective social choice means that efficiency is one of a number of considerations that need to be weighed up by the community.

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<sup>12</sup> A carpetbagger was a pejorative term used by Southerners after the American Civil War to refer to Northerners who they feared would come down and plunder the South. It is now used to refer to external actors coming in and profiteering at the expense of locals.

## Appendix C: List of Interviews

\*No interviewees requested anonymity, however I have ascribed aliases due to the tight-knit nature of social relations in the community.

<b>Alias</b>	<b>Role</b>	<b>Date of Interview</b>
Paul	Co-op committee member	27.02.2017
Simon	Co-op committee member	28.02.2017
Ruaidhrí	Co-op committee member	01.03.2017
Gearóid	Co-op committee member	02.03.2017
Mary	Co-op committee member	03.03.2017
Luke	Co-op committee member	09.03.2017
Lisa	Co-op committee member	09.03.2017
Brendan	Co-op committee member	22.03.2017
Phyllis	National-level community energy campaigner and practitioner	25.03.2017
Ciarán	National-level community energy consultant	30.03.2017

## Appendix D: Consent Form used for Interviews

Lund University Centre for Sustainability Studies



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UNIVERSITET

**LUCSUS**  
Lund University Centre for  
Sustainability Studies

### Informed Consent Form

*Researcher: Robert Wade*

I, the researcher, am a Master's student of Environmental Studies and Sustainability Science at Lund University, Sweden.

For my master thesis, I am conducting semi-structured interviews of around 30 -60 minutes.

At any point of the interview, you can ask questions or decide against taking part in the interview. Furthermore, you can demand that certain statements are not published.

By signing this form, you agree to participate in the interview. Anonymity will be ensured during the entire research process if wished for.

Do you agree to being recorded?

Yes

No

Do you want to remain anonymous?

Yes

No

The results of my research can be shared with you if you are interested.

Thank you very much for your time!

Date

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Signature

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## **Appendix E: Sample Interview Guides**

\*these interview questions are examples of guiding questions. Oftentimes the interviews took off in different directions.

### ***Appendix E1: Co-op committee members***

#### **Intro**

- Could you just tell me a bit about the history of the co-op?
- Your role in the co-op?
- Relationship with government, external bodies etc?
- Important?
- Am I right in saying that life membership is available to all islanders for €100?

#### **The wind turbines**

- Are the three turbines on Inis Meain still there?
- Were you involved with the construction of those?
- Are they functioning? Whats the status?
- Are new ones being built?

#### **Siting**

- How is the site chosen? Whose land? Are they compensated?
- Does this allow greater choice of area to locate wind for optimal productivity?
- Do you use local knowledge to find the most ideal locations?

#### **Has there been opposition to the proposed construction of wind turbines?**

- Main reasons?
- within co-op or outside?
- how dealt with? Do you convince them otherwise? What arguments/reasons are used?
- any other reasons?
- Is it successful? Do many people still oppose?

#### **Personal position on wind**

- What was your stance on wind energy before the co-op?
- Has the co-op changed your stance?

- What convinced you?
- What are the reasons to try to erect wind turbines? [personal or common]

### **Ownership**

- Is ownership an important factor?
- Ownership of what?

### **What does membership in the co-op mean to people? What do they see the co-op as?**

- Do you think people's expectations and ideas about wind energy change as a result of membership?
- How?
- Why do you think people change? What motivates this change?
- ➔ E.g. sense of collective purpose, ?
- What about non-members?
- Do you think being a member changes people's ideas more generally? In what ways?
- Does this collectiveness as 'we as sustainable islanders' helps drive people to support wind energy?
- Would you say members join because it makes sense from an individual economic point of view?
- What reasons are people getting involved for?
- How do you get people to 'buy in' to your idea?

### **Decisionmaking**

- Can you tell me more about the decisionmaking process within the co-op? (majority, consensus?). By whom?
- Do you discuss a lot to try and reach an agreeable outcome by giving reasons?
- Do some voices weigh more heavily than others?
- Does this process change people's expectations and opinions about wind? How?
- How is fairness achieved in decisionmaking? How do you consider a decision fair?
- Is this decisionmaking process important for people? For getting people on board?

### **Outcome Subjectivities:**

#### **Information**

- How do you go about informing people?

#### **Economic**

- How is the capital acquired for the wind turbines?
- Where do/will the benefits go?

- What do you think is the fairest thing to do with the economic benefits?
- If for common good: Why do people accept this? Must they be convinced? {challenge}
- Is this then considered a fair distribution?
- Are these economic benefits an important element of gaining social acceptance?

### **Ideology**

- Are there different groups with different visions for the island? What are these visions?
- Is this vision important for acceptance?
- How are these competing visions dealt with?
- Why do people give up on this visions? {challenge}

### **Conclusion**

- Overall, what are the key advantages the co-op has for gaining social acceptance of wind over other models?
- What gives the co-op 'clout? In the community? Why do people listen?

### ***Appendix E2: National-level community energy campaigner and practitioner***

- What do you personally see community energy as?
- What do you think the reasons are for the large public opposition to wind in Ireland?
- How do you think community energy can overcome this?
- What are governmental bodies doing? What sort of transition are they promoting?
- Are they purely rhetorical?
- Or are they diverting resources/changing regulations?
- What about SEAI Sustainable Energy communities? What sort of advice and skills do they provide to their members?
- You mentioned before to me that this could be a way for the government to offload some responsibility. Do you think this carries with it any danger?
- Other contacts? E.g. SEAI.. Ruth Buggie or Orla Nic Suibhne

### ***Appendix E3: National-level community energy consultant (asked in addition to those in Appendix 3.2)***

- What do you do? What sort of advice would you give to co-ops?

- Do you think there is an overabundance on technical advice and expertise given to communities?
- You're an SEC mentor? How does this work?