

# **SOCIAL ACCEPTANCE OF RENEWABLE ELECTRICITY DEVELOPMENTS IN NEW ZEALAND**

**A report for the Energy Efficiency and Conservation Authority**

**Janet Stephenson and Maria Ioannou**

**Centre for the Study of Agriculture, Food and Environment  
University of Otago**

**November 2010**



### **The Authors**

Dr Janet Stephenson is a Senior Research Fellow at the Centre for the Study for Agriculture, Food and Environment (CSAFE) at the University of Otago.

Maria Ioannou has an MSc in City Design and Social Science, London School of Economics, and has considerable experience in public policy in England and the European Union. She is currently working as a consultant in New Zealand.

## EXECUTIVE SUMMARY

1. While some renewable electricity generation (REG) developments are clearly contentious, renewable energy is well supported as a concept by the New Zealand public.
2. However this level of generic support is not necessarily carried through to specific development proposals, when those who have an interest are able to consider the actual impacts and trade-offs involved, and to form their personal views accordingly.
3. There has been a falling-away of support for all forms of energy developments between 2004 and 2009, and an apparent increase in people feeling they do not know enough to give an opinion.
4. The highest level of support in public opinion surveys is for wind generation, which is surprising given that other evidence suggests wind is more contentious than the two other most common applications - geothermal and hydro.
5. The NIMBY concept is widely discredited as an explanation for oppositional behaviour.
6. There is no consistent relationship between proximity to a REG development and levels of opposition – this varies greatly with the context
7. The ‘silent majority’ - people who do not make submissions on specific REG proposals - cannot be assumed to be supportive of those proposals.
8. The media does have an influence in shaping public discourse, but is also influenced by the wider social-economic context, and tells both negative and positive stories about REG.
9. Less than optimal interactions between developer and public can lead to lack of trust in developer assurances and information.
10. Bad experiences with development in the past can create a legacy of mistrust which will carry on to new proposals.
11. While it is usually more cost-effective to establish large-scale REG developments, these are more likely to engender public opposition.
12. Siting decisions are crucially important for social acceptability, and not all sites are equal in the public eye. While the technical qualities of the site may be seen as the most significant drivers for the developer, the social, environmental and cultural qualities of the site and its environs will be the most important aspects for the public.
13. Assessment methods are well advanced for the physical attributes of a site and impact assessments, but selection of sites by developers currently appears to pay little attention to place attachment, and the impacts of a development on the socio-cultural qualities of landscapes/sites, even though this appears to be a key reason for public disquiet.
14. The resource consent process only offers the public to have a voice in specific applications, yet there are wider issues relating to REG generally in which the public has an interest but no voice, such as preferences for siting and scale, and opportunities for co-benefits.
15. Targets for more renewable energy are likely to be more achievable if policies are developed to address the identified barriers to social acceptability of REG at national, regional and district levels.
16. Social resistance *per se* is not a bad thing. Public debate and dissent is part of the

wider democratic process, and has the advantage of bringing to the surface issues of concern, and highlights fundamental trade-offs that need to be considered in any change process.

17. Drawing from the study's findings as a whole, we conclude that the public would be more likely to find new REG acceptable if:
- They have greater knowledge of and familiarity with the technology
  - They consider the development is suitable in relation to the qualities of the site
  - The proposal does not have significant impacts on themselves and other tangible and intangible qualities that they value
  - They feel that developers have listened to their concerns and dealt with them respectfully and honestly
  - They feel trust and good faith in the developer and this is continued through the life of the project
  - The type, scale, and rate of proliferation of the technology is acceptable to the people of the area (i.e. what is socially acceptable may change over time)
  - They have a stake in the development, or there is another tangible flow of benefits back to the affected individuals and community/ies
  - They have some certainty as to likely future constraints on REG developments – that is, that they do not feel obliged to oppose every proposal as a matter of principle
  - They feel that their voices and concerns will be considered to be legitimate and credible in the consenting process
  - The management and effects of the REG plant over time continue to be seen in a positive light by the public
  - The public and communities feel that they are contributors to the energy transition rather than onlookers
18. We conclude that there is fundamentally a widespread acceptance of renewable energy generation amongst the New Zealand public, but that this support may be becoming more qualified, and there are a number of unresolved or poorly addressed issues which are causing or exacerbating friction.

*Note:* Throughout this report, we have identified the key points of a given discussion with a **bold** typeface. In Chapters 3 and 4 we have also included a summary of key points at the start of the chapter.

## TABLE OF CONTENTS

<b>Executive Summary</b> .....	3
<b>1. Introduction</b> .....	9
1.1 What is meant by social acceptance? .....	11
1.2 What renewable electricity generation projects are being considered? .....	12
1.3 Why look at the different renewable energies together? .....	13
1.4 What factors affect the successful establishment of renewable electricity generation? .....	13
<b>2. Methodology</b> .....	15
<b>3. Windows on Social Acceptance in New Zealand</b> .....	17
3.1 General public opinion on renewable electricity generation .....	19
3.2 Location of existing and proposed REG.....	25
3.3 What the numbers show .....	34
3.4 Renewable energy generation - stakeholder perceptions.....	53
3.4.1 Siting .....	54
3.4.2 Proximity .....	56
3.4.3 Scale .....	57
3.4.4 Impacts on the Environment .....	58
3.4.5 Cumulative issues .....	58
3.4.6 Belief in the technology and information.....	58
3.4.7 Trade-offs.....	60
3.4.8 Developer-stakeholder relationships.....	62
3.4.9 Perceptions of monetary arrangements .....	64
3.4.10 Flow of benefits.....	65
3.4.11 Co-investment .....	66
3.4.12 Legacies .....	67
3.4.13 Role of the media .....	68
3.4.14 Fairness and equity.....	68
3.4.15 Expressions of support v opposition.....	70
3.4.16 Contrasts between different REG types .....	71
3.4.17 Policy and Planning.....	72
<b>4. Common Assumptions and the Research Evidence</b> .....	75
4.1 Assumption 1: Renewable electricity generation is strongly supported by the public	76
4.2 Assumption 2: It's just NIMBY – people don't like things in their backyards, even if they think it's a good idea for the country generally.....	77
4.3 Assumption 3: People closer to renewable energy developments oppose them more than people far away .....	78
4.4 Assumption 4: The main thing people are concerned about is visibility .....	78
4.5 Assumption 5: People object because they are poorly informed.....	80
4.6 Assumption 6: There is a 'silent majority' of people who support proposals but don't make submissions .....	83
4.7 Assumption 7: It doesn't matter what people think of the developer, just whether the proposal is a good one or not .....	84
4.8 Assumption 8: It is better to have a few big projects than lots of small ones .....	87
4.9 Assumption 9: Site selection should first and foremost be based on the technical characteristics of a site .....	88
4.10 Assumption 10: A successful project is one that has no public resistance .....	89

5.	<b>Discussion</b> .....	91
5.1	Is there a problem with lack of social acceptance? .....	91
5.2	What is relevant to NZ from the Create Acceptance study? .....	95
5.3	Achieving greater social acceptability of REG .....	96
Appendix 1	Spreadsheet of REG proposals 2000-2010 (in CD)	
Appendix 2	National and local factors influencing new energy projects	

## TABLES AND FIGURES

Table 3.1a.	Responses to the question: <i>How supportive are you of the following energy sources/technologies to generate electricity for New Zealand</i>
Table 3.1b.	Responses to the question: <i>How supportive are you of ...?</i>
Table 3.3a	Consent applications for REG 2000-2010 >10MW
Table 3.3b	Average MW of energy generation applications 2000-2010 > 10MW
Table 3.3c	Scale of wind farms vs appeals 2000-2010
Table 3.3d	Key reasons for decision in seven Environment Court decisions on wind farms
Figure 3.1a:	Graph of Table 3.1. EECA Consumer Monitor Public Opinion Survey Oct-Dec 2009
Figure 3.1b:	Public opinion on electricity generation from wind 2004 & 2009
Figure 3.1c:	Public opinion on electricity generation from hydro 2004 & 2009
Figure 3.1d:	Public opinion on electricity generation from geothermal 2004 & 2009
Figure 3.1e:	Public opinion on electricity generation from gas 2004 & 2009
Figure 3.1f:	Public opinion on electricity generation from coal 2004 & 2009
Figure 3.2a	North Island – existing electricity generation as at June 2010
Figure 3.2b	North Island – proposed electricity generation as at June 2010
Figure 3.2c	South Island – existing electricity generation as at June 2010
Figure 3.2d	South Island – proposed electricity generation as at June 2010
Figure 3.2e	Bay of Plenty Region: Existing and proposed electricity generation as at June 2010
Figure 3.2f	Manawatu-Wanganui Region: Existing and proposed electricity generation as at June 2010
Figure 3.2g	Hawke’s Bay Region: Existing and proposed electricity generation as at June 2010
Figure 3.2h	Waikato Region: Existing and proposed electricity generation as at June 2010
Figure 3.3a	Consent applications by power type, 2000 – 2010 (>10MW)
Figure 3.3b	Total applications and total appeals, all power types 2000-2009 (>10MW)
Figure 3.3c	Wind farm applications and appeals 2000-2009 (>10MW)
Figure 3.3d	Status of consent applications by REG type 2000 – 2010 (>10MW)
Figure 3.3e	Proportion appealed or other status 2000 – 2010 (>10MW)
Figure 3.3f	Percentage appealed by power type
Figure 3.3g	Wind – current status of applications lodged between 2000-2010 (>10MW)
Figure 3.3h	Hydro – current status of applications lodged between 2000-2010 (>10MW)
Figure 3.3i	Consent applications by region 2000 – 2010 (>10MW)
Figure 3.3j	Submission breakdown for Project Central Wind
Figure 3.3k	Submission breakdown for Project West Wind
Figure 3.3l	Submission breakdown for Project Hayes





## 1. Introduction

Renewable energy plays an important role in the generation of electricity in New Zealand, with around two-thirds of electricity generated from renewable resources.<sup>1</sup> Historically, the main renewable sources of electricity generation have been hydro and geothermal, but wind energy is increasing its contribution (4% in 2010)<sup>2</sup> and NZ's first two tidal energy projects were proceeding through the consenting process in 2009. The recognition of the need for significant global action to combat climate change along with the Government's focus on promoting economic development has resulted in a national policy environment that targets growth in renewable electricity generation (REG) – and in particular the Government's Renewable Electricity Target to generate 90% of electricity from renewable sources by 2025 (providing this does not affect security of supply).<sup>3</sup> Such aspirations mean that a significant number of new REG plants will need to be established. Modelling used to develop the 90% renewable electricity target indicated that the additional renewable generation required in 2025 compared to 2007 was approximately 20,000 GWh. Depending on the type of REG used to provide this additional renewable energy, the additional renewable generation capacity required would be in the range 2400 to 5700MW.<sup>4</sup>

Establishing new REG is a complex exercise, involving amongst other factors the market conditions, resource availability and policy fit. Any REG proposal must also be consented through the resource consent process to ensure that it achieves sustainable management of natural and physical resources, and that adverse effects are avoided, remedied or mitigated. It is expected (although not legally required) that proponents will consult with those who may be affected by the proposal. Most REG proposals will also be publicly notified, and the public at that point are able to make submissions, appear at hearings, and if unhappy with the decision, appeal to the Environment Court or a higher court.

How the public perceives and responds to a REG proposal is therefore one of many influences on whether a proposed REG development will be granted consent. Social acceptance (or resistance) as filtered through the resource consent process may have some effect on resource consent decisions. Over longer timeframes, public attitudes also influence policy settings.

There is a perception that there is an increasing lack of acceptance by the public of New Zealand for new REG plants, particularly wind and hydro developments, and that this is creating a significant hurdle to gaining resource consent approval. It has been claimed that New Zealand developers are facing increasingly long consent processes<sup>5</sup> and that this creates significant cost to the developer - for example, the 62-turbine Project West Wind near Wellington, delayed more than 2 years due to an Environment Court appeal, is said to

---

<sup>1</sup>73% in 2009. Ministry of Economic Development (2010) New Zealand Energy Data File  
[http://www.med.govt.nz/templates/StandardSummary\\_15169.aspx](http://www.med.govt.nz/templates/StandardSummary_15169.aspx)

<sup>2</sup> Ministry of Economic Development (2010) New Zealand Energy Data File  
[http://www.med.govt.nz/templates/StandardSummary\\_15169.aspx](http://www.med.govt.nz/templates/StandardSummary_15169.aspx)

<sup>3</sup> New Zealand Government (2010) Draft New Zealand Energy Strategy – Developing Our Energy Potential  
<http://www.med.govt.nz/upload/73919/Developing%20Our%20Energy%20Potential%20July%202010.pdf>

<sup>4</sup> Concept Consulting (2007) NZEES Renewable Electricity Target; Modeling Results June 2007

<sup>5</sup> Fisher, 2005

have added around \$120 million to overall project costs.<sup>6</sup> Groups have formed to oppose wind farms and hydro schemes in recent years, such as Uplands Protection Society and Rational Energy Debate (Project Hayes), the Makara Guardians (Baring Head and Project West Wind) and the Aokautere Guardians (Te Rere Hau), and Waitaki First (Project Aqua). Existing groups such as iwi and hapu, environmental groups and/or recreational organisations have been notable in their opposition to a number of recent projects including the Kaipara Harbour tidal power project, the Mokihinui River hydro scheme and the consenting of the Wairakei geothermal power scheme. In the Wellington region, a stand-out example is Project West Wind which attracted 3760 submissions, of which 2530 were supportive, 437 with conditional support and 789 opposed (4 were unclear). This degree of contention appears on the face of it to be at odds with public opinion surveys that indicate high levels of public support for renewable energy developments.

This report, and the research which informs it, was commissioned by the Energy Efficiency and Conservation Authority (EECA). Its purpose is to examine whether societal acceptance issues are significantly limiting the establishment of new REG projects, and to identify the key characteristics of social acceptance/resistance to REG in the New Zealand context. It draws inspiration in part from the Create Acceptance<sup>7</sup> project (part of the European Commission's Sixth Framework Programme) which set out to examine why in practice many renewable energy projects in Europe were facing strong resistance from stakeholders<sup>8</sup>, often proving to be a far bigger stumbling block than either technology or costs.<sup>9</sup> Create Acceptance (Cultural Influences on Renewable Energy Acceptance and Tools for the development of communication strategies to promote ACCEPTANCE among key actor groups) was particularly focused on the adoption of new energy technologies and practices (including household energy efficiency, biofuels, solar energy, bio-energy and carbon capture and storage) and aimed to help those implementing innovative new energy technologies to deal with societal acceptance issues. Subsequently, a tool (labelled ESTEEM<sup>10</sup>) was developed to assist in acceptance of new and innovative REG projects by applying a structured process, facilitated by an external consultant, to identify stakeholders and to work with the project manager to resolve potential issues at an early stage in the process.

However, conditions in Europe are not the same as in New Zealand, and it is unclear whether such a tool is needed in New Zealand, nor indeed whether a lack of social acceptance is causing problems for achieving targets for the types of REG that are occurring in NZ. This project therefore sets out to examine social acceptance of REG technologies being utilised in the New Zealand situation. It aims to establish some empirical and

---

<sup>6</sup> N. Macdonald, Winds of change, The Dominion Post (2008) pp. E1–E2.

<sup>7</sup> <http://www.createacceptance.net/>

<sup>8</sup> "Although public opinion surveys also show widespread support for renewable energy sources and energy efficiency in Europe (Eurobarometer, 2006), new energy projects often fail because of a lack of stakeholder acceptance. Thus, in recent years, there has been increasing attention to the concept of 'social acceptance' or 'societal acceptance' of renewable energy sources. Nonetheless, our overall understanding of how acceptance emerges, or fails to emerge, is still quite limited." (from Introduction to Create Acceptance report, Heiskanen et al 2007: 18)

<sup>9</sup> See European Project Create Acceptance <http://www.pepeseenergyplanning.eu/archives/208>; and specifically Heiskanen, E. et al. 2007

<sup>10</sup> ESTEEM (Engage stakeholders through a systematic toolbox to manage new energy projects) [www.esteem-tool.eu](http://www.esteem-tool.eu)

qualitative evidence of acceptance (and resistance) relating to renewable electricity generation projects (hydro dams, wind farms, geothermal and marine energy) over the past 10 years. The study also seeks to identify what types of socially determined issues pose significant barriers for REG projects, and whether this differs between types of electricity generation.

### 1.1 What is meant by social acceptance?

The concept of social acceptance in relation to renewable energy developments was first mooted in the 1980's by a wind power researcher who noted that the siting of wind turbines was a matter of 'public, political and regulatory acceptance'.<sup>11</sup> Although there has been much research on aspects of societal responses to REG in the intervening years, the term 'social acceptance' has only emerged in common parlance since the mid 2000s. In particular, a special issue of the journal *Energy Policy* in 2007 was themed 'Social Acceptance of Renewable Energy Innovation', and the Create Acceptance studies also used the term extensively.<sup>12</sup> As used in these studies, the concept appears to have been adopted from literature on the diffusion of innovations - looking at how society accepts new and emerging technologies - and its application still carries a sense of this origin. For the purpose of this report, we will be applying the concept to also include older REG technologies such as hydro and geothermal, so the focus is less on technology diffusion and adoption, and more on societal responses to proposals to develop new REG plants.

Social acceptance is a useful concept as it captures a sense of the wide variety of ways in which society responds to new developments. 'Society' as used here is not limited to the public as a whole, but may also include communities, cultural groups, political groups and governance bodies. 'Acceptance' refers to greater or lesser levels of support or opposition to REG that emerge from the interactions between values, beliefs, knowledge, opinions and motivations of individuals and groups. Rather than focusing on outright support or opposition, the concept of social acceptance acknowledges that people's responses are likely to be complex and nuanced, with multiple (sometimes conflicting) drivers.

Social responses to REG can be manifest in many forms including media stories, public debate, art, responses to opinion surveys, the numbers and contents of submissions, resource consent decisions, planning policies, market responses, and national-level energy and climate change strategies, policies and legislation. All of these (and many other sources) can provide evidence of social acceptance and may have a bearing on the acceptability of new energy developments. Wüstenhagen *et al.* (2007) distinguish between three dimensions of social acceptance: *socio-political acceptance* of renewable energy technologies and policies by the public, key stakeholders and policy makers; *community acceptance* of specific renewable energy projects; and *market acceptance* of renewable energy technologies by consumers, investors and firms. For the purposes of this report, we are not examining any aspects of the market, and only touch lightly on policy settings, but

---

<sup>11</sup> Calman, 1984 cited in Wüstenhagen et al., 2007, p. 2684.

<sup>12</sup> Notably, a Special Issue of *Energy Policy* on Social Acceptance of renewable energy innovation in 2007 (issue 35) and the 2007 report for the EU Framework 6 "Create Acceptance", PV Accept, 2005; H2Accept, 2005; Accept, 2006.

we feel a separate study would be worthwhile of the extent to which these might reveal acceptance or otherwise of REG. This report focuses on aspects of socio-political acceptance and community acceptance, and uses selected and relatively easily accessible sources of data to start to depict the nature of social acceptance of REG in New Zealand over the first decade of the 21<sup>st</sup> century (2000-2010).

While the purpose of this report is to shine some light on social issues and how they might influence project success, it must not be forgotten that other factors may be even more influential. For Project Aqua, for example, while the huge public opposition to this proposed 520MW hydro scheme for the lower Waitaki River is what remains in people's memories, the decision to discontinue Aqua was ultimately an economic one:

"In essence, the decision [to discontinue Project Aqua] has been driven by a series of commercial uncertainties which make the risks of continued spending on the project unacceptable... The simple fact is that in the current circumstances, Project Aqua is no longer achievable."

*Meridian chief executive Keith Turner. Meridian Energy Discontinues Project Aqua. Renewable Energy Today, April 01, 2004*

## 1.2 What renewable electricity generation projects are being considered?

Renewable electricity is that which is generated from naturally replenished resources such as sunlight, wind, rain, tidal currents and geothermal heat<sup>13</sup>. For the purpose of this report, we confined our consideration to hydro-electric developments, geothermal developments, wind farms and marine energy developments. The first two are long established technologies in New Zealand, while wind is rapidly becoming a significant player in the electricity generation sector. Marine energy is an emerging technology with significant potential. Other REG types (e.g. photovoltaic cells, house-scale wind turbines) have not as yet been contentious issues, and so were excluded from consideration.

**We have not included those applications seeking re-consent for existing projects, for example the Patea Dam re-consent application of 2008, as these seem to be small in number and to involve different issues to new REG projects. However, we have included upgrades and extensions as some add a considerable number of MW to the existing plants.**

We also excluded any REG projects under 10MW. The reason for this was that in our scoping of resource consent appeals it appeared that very few developments under 10MW had been appealed to the Environment Court. Two recent NZ surveys have also shown a far higher level of acceptance of small-scale wind projects amongst rural landowners. One survey found that while 55% would support a wind farm of more than 50 turbines in their district, this rose to 78% support for a wind farm of fewer than 5 turbines.<sup>14</sup> The other survey found that only 50% were either positive or very positive about a 14-turbine windfarm, while 80%

---

<sup>13</sup> Using the EECA definition of renewable energies which includes geothermal.

<sup>14</sup> Schaefer, 2010

were as positive about a 2-turbine windfarm.<sup>15</sup> We conclude from this that there is a high level of social acceptance of smaller REG plants. Understanding the reasons for this difference in support is outside the scope of this study, and could be another research project in itself.

### **1.3 Why look at the different renewable energies together?**

New Zealand law and policy that sets out to encourage renewable energy<sup>16</sup> does not differentiate between REG types. It is expected that the government's renewable energy objectives, specifically the 90% target, will require a diverse mix of new REG, not least because a secure electricity system requires a range of energy generation types. In the context of Government aspirations for REG, it is therefore appropriate to examine social acceptance of all REG, and to examine both how accepting the public is of REG as a whole, and also whether there are different levels of acceptance across different REG types.

Clearly, the physical characteristics, siting requirements and impacts of each REG type vary greatly. However, there are also some similarities between them which may have some relevance to social acceptance. Firstly, in utilising renewable sources of energy they create - in operation - low or minimal net greenhouse gas emissions, and in this sense are generally seen as 'sustainable'. They can be seen as beneficial to the nation and the globe in aiding progress towards a desirable future state. At the same time, in utilising natural resources such as water, wind and geothermal aquifers, they can all arguably be perceived as potentially 'despoiling' a natural environment. This can pitch those who value local environments against those who value renewable energy and low carbon emissions - a social acceptance/resistance tension described in international literature as 'green on green'.<sup>17</sup>

Another similarity is that REG plants, being reliant on the presence of natural resources, usually have limited siting options. Unlike energy generation plants reliant on transportable non-renewable fuels, REG cannot usually be 'hidden away' in an industrial area, but need to be located at the resource in question. For this reason REG plants – particularly hydro and wind farm developments – are generally highly visible to the public, which may have some bearing on social acceptance.

### **1.4 What factors affect the successful establishment of renewable electricity generation?**

There are many factors that together determine whether a REG proposal will eventually be implemented. These include technical limitations, resource availability, market conditions, government policies and geographic constraints. Lack of acceptance by the public is thus one of many factors, although it is widely held to be a major issue for successful

---

<sup>15</sup> Barry & Chapman, 2009

<sup>16</sup> E.g. Section 7(j) RMA "the benefits to be derived from the use and development of renewable energy."; proposed National Policy Statement for Renewable Electricity Generation; section 21 of Energy Efficiency and Conservation Act 2000 – functions of the Authority "The function of the Authority is to encourage, promote, and support energy efficiency, energy conservation, and the use of renewable sources of energy".

<sup>17</sup> Warren et al 2005

implementation. For example, international literature on wind energy contends that wind developments are becoming increasingly difficult to implement and this is frequently attributed, at least in part, to public opposition,<sup>18</sup> but research suggests that the impact of public opposition on the success of specific REG proposals is variable. In Europe, there is certainly evidence of a more vocal public in opposition to certain renewable energy developments, particularly wind farms, and it is suggested that this is at least in part due to a proliferation of wind energy developments in recent years.<sup>19</sup> Public opposition has been blamed by some for a slower uptake of renewable energies than predicted.<sup>20</sup> A 2005 study in England and Wales revealed that around 60% of wind power planning applications were refused consent at the equivalent of council level, but some were won at appeal, meaning around 70% of wind applications were eventually approved (Toke, 2005).

However, evidence is mixed as to whether the apparent lack of social acceptance is actually preventing REG growth. While it is generally agreed that public opposition often leads to delays, there is dispute as to what extent planning decisions are influenced by public opposition,<sup>21</sup> and there is evidence that institutional and policy barriers have far more influence on decisions than does public opinion.<sup>22</sup> There is also evidence that the development of renewable energy in Europe and elsewhere in the world is generally outpacing forecasts of its potential, reaching predicted values several years in advance and surpassing values by several hundred per cent.<sup>23</sup>

Importantly, the energy market itself has a major influence on the implementation of REG, even after consents have been granted. In New Zealand there are a number of consented wind farms, for example, which have been delayed for economic reasons such as the price of turbines and variable exchange rates.<sup>24</sup> Whether a lack of social acceptance is really problematic needs to be considered in light of findings such as this.

It is outside the scope of this report to discuss factors such as market and institutional issues that might create barriers to REG implementation. However they are clearly 'part of the picture' for the success of REG development, and this is an area that deserves more research.

---

<sup>18</sup> Barry & Chapman, 2009; Bell et al., 2005; Ellis et al., 2007; Wüstenhagen et al., 2007

<sup>19</sup> Wüstenhagen et al., 2007

<sup>20</sup> Sovacool, 2009

<sup>21</sup> Aitken et al., 2008

<sup>22</sup> Wolsink 2000, Breukers & Wolsink, 2007

<sup>23</sup> Perpryzk & Hilje, 2009

<sup>24</sup> Barry & Chapman, 2009

## 2. Methodology

The brief for the study that led to this report was as follows:

1. Review literature, studies and surveys that may shed some light on the nature and extent of social acceptance/resistance towards renewable energy generation projects.
2. Establish empirical evidence on energy generation projects (hydro, geothermal, wind, marine, and also non-RE projects for comparison) over the past 10 years.
3. Identify critical issues and success factors for different energy technologies: review issues/barriers and factors likely to promote success within generation types and across all generation types.
4. Identify key stakeholders for different energy technologies, what positions they tend to take, what issues they are concerned about, and how are these currently identified and addressed.
5. Carry out case studies to gather qualitative data relating to (3) and (4), including interviews with relevant project managers, stakeholders and council staff.
6. Collate and analyse the information gathered during the previous steps.
7. Draw conclusions.

### Research approach

At the beginning of the project, the two team members met with EECA staff and were guided by them in setting the research parameters. We were also given access to data held by EECA and were directed to other sources.

The research was fitted into a tight (5 month) timeframe and there was no opportunity for primary research apart from a series of interviews with some key stakeholders. The study was therefore largely dependent on drawing together a wide range of existing dispersed data which we felt might provide 'windows' on to aspects of social acceptance. This included information held by EECA, NIWA, Electricity Commission, Transpower, councils, University of Otago, and Environment Court decisions. We also undertook out a literature review of international peer-reviewed research. In addition, we carried out a number of interviews with stakeholders as to their opinions and experiences. The interviewees all signed consent forms permitting use of their interview material for the purposes of this study.

Because renewable energy generation has not previously been examined in New Zealand with the lens of 'social acceptance' we have in effect been breaking new ground by bringing together a range of empirical and qualitative data to attempt to sketch out the nature of societal responses to renewable energy generation. However there are many gaps in the

data, and many areas that deserve more focused research. We believe this report offers a useful baseline from which to carry out future research.



### 3. Windows on Social Acceptance in New Zealand

This section collates and discusses four different sets of data which offer insights into aspects of social acceptance of REG. Section 3.1 draws from public opinion surveys carried out for EECA. Section 3.2 shows the location of existing and proposed REG across New Zealand. Section 3.3 shows the result of analysis of data drawn together from a range of disparate sources on the numbers, locations and types of REG proposals, and how these have fared through the RMA process. Section 3.4 discusses the findings from interviews with a number of stakeholders (developers, councils, iwi, opposition groups) as to their views on social acceptance of REG.

#### Summary of key points for Chapter 3:

- EECA surveys of public preference for electricity generation in 2009 show that wind energy is the most highly supported, closely followed by hydro energy. At the other extreme, over half the surveyed public oppose or strongly oppose coal and oil, and only 10% either support or strongly support them.
- Comparing the 2009 survey with a 2004 survey, every generation type shows a drop in 'very supportive' opinions, and in most cases an increase in 'supportive' opinions. This suggests a shift to more qualified, circumspect support towards energy generation. There is an increase across all generation types of 'don't know enough'. The public appear to feel less well informed about energy generation today than they did 5 years ago.
- Over the past 10 years the number of wind projects proposed has been almost twice that of any other power type. Geothermal and hydro are second and third respectively in terms of total number of consent applications. There has been a fall-off in application numbers since a peak in 2005-2006.
- Almost half of all REG consent applications lodged are appealed. Wind has faced the greatest number of appeals over the last decade. It is also the only power type where resource consents have been declined over this period.
- Looking just at wind farms, the time taken from lodging a resource consent application to final decision varies from 1 month to 40 months, with an average (across both appealed and not appealed) of 16 months. In comparison, a recent survey by the European Wind Energy Association found that it took an average of 42 months to gain consent for an onshore wind farm across the 22 EU countries studied.
- Distance from population centres is not a predictor of numbers of submissions, nor of strength of support or opposition. While proximity to large population centres may result in higher submission numbers, it does not necessarily result in a higher proportion of opposition.
- If Project Hayes is typical of other REG projects, both supportive and opposing submitters sometimes use identically worded submissions, although it is more common amongst supporters.
- Siting was a key issue in wind farm cases before the Environment Court, and landscape qualities were the most frequently discussed aspect of siting. Social and cultural considerations, particularly relating to iwi and other local people, are clearly another important consideration in the Court's 'balancing exercise'. The Court has suggested that generation delivers benefits to those in the region, but has noted that these regional benefits are not necessarily tangible for those directly affected.
- In most cases where social issues are to the fore, those appealing it are individuals or community groups whose expertise is locally-based. Usually such groups have little experience of the Environment Court system and are not well funded, so have less ability to hire in expert evidence.
- Siting is a crucial issue in the acceptance or otherwise of a proposal by the public, but the energy industry's rationale for selecting a site will not necessarily coincide with how it is perceived by the public.
- The public typically respond more negatively to larger scale developments, and more positively to smaller scale developments - a finding common in wind research in NZ and internationally.

- Cumulative effects of wind farms are topical in the Manawatu area, but it is likely to be only a matter of time before cumulative effects start to become an issue in other resource-rich areas such as Hawke's Bay and Otago/Southland (wind), geothermal (Waikato, Bay of Plenty) and hydro (Westland).
- There appears to be an industry perception that there is a public 'disconnect' in understanding trade-offs – for example, that the public do not understand that to continue to receive unlimited electricity they need to accept changes to place-qualities.
- There are opposing views on the 'green-ness' or sustainability of renewable energy technologies generally – a debate that is not easily accommodated in RMA hearings and thus largely stifled nationally.
- Interviews with opponent groups reveal a lack of belief in REG at two levels – at the project level, where assurances about effects may (rightly or wrongly) be disbelieved, and at the technology level, where people may question the efficacy of a particular technology. At both of these levels there is always room for debate, but the RMA process only allows for the first question to be aired. Currently, there is no process whereby the public can have a voice in the second question, which may partly account for the sense of frustration evident in the interviews.
- Even within a given resource consent process there can be quite different perspectives on whether consultation has been adequate or not. Poor communication and engagement, whatever the cause, can create strong us-and-them positions between the developer and stakeholders, and strengthen feelings of opposition. Best consultation practice is generally accepted as necessary within the New Zealand planning and project management fraternity. However it appears that it does not always play out in the field as well as it might.
- There is a perceived correlation between the recipients of direct benefits from a proposal, and support for that proposal. While this is hardly surprising, it also sets up a division within communities of 'haves' and 'have-nots'.
- Financial arrangements with affected parties can result in 'burying' issues that collectively could be significant if they were all brought to the surface. This potentially weakens the positions of others with related concerns and reduces the ability of hearing panels to consider the full societal (or other) implications of a proposal. The process also tends to reduce concerns to simply a dollar figure, leaving those who can negotiate well to financially benefit, and those who cannot (and who are not happy with a proposal) to expending their time and money on opposition. Essentially it can set up a loaded playing field which can exacerbate a sense of 'us' and 'them' amongst community members.
- There are different perspectives on whether people who are directly impacted should receive some benefits from REG. Co-governance and joint venture arrangements already exist and seem likely to increase in geothermal developments in particular. This may partly account for the greater degree of acceptance of geothermal energy compared to other REG types.
- The history of interactions between energy companies and a community seems to have a bearing on how new proposals are perceived. The power of past legacies should not be overlooked, nor the impact of current actions on future legacies, as the effects can clearly be long-lasting.
- There was a strong feeling from opposing groups that while they were attempting to represent some aspect of the public interest, they were in a strongly inequitable position compared to the developer and supporting groups.
- There is a perception that there is a 'silent majority' of support (particularly for wind farms) that is not being voiced.
- The absence of national and regional-level policies seems to be adding to a sense of uncertainty and risk, as neither the public nor developers have any certainty about appropriate locations for REG developments, and what scale and degree of proliferation might be appropriate. This uncertainty is perhaps partially responsible for strong public opposition to proposals, if the public feel that it is only their voice against developers that is holding wholesale proliferation in check.

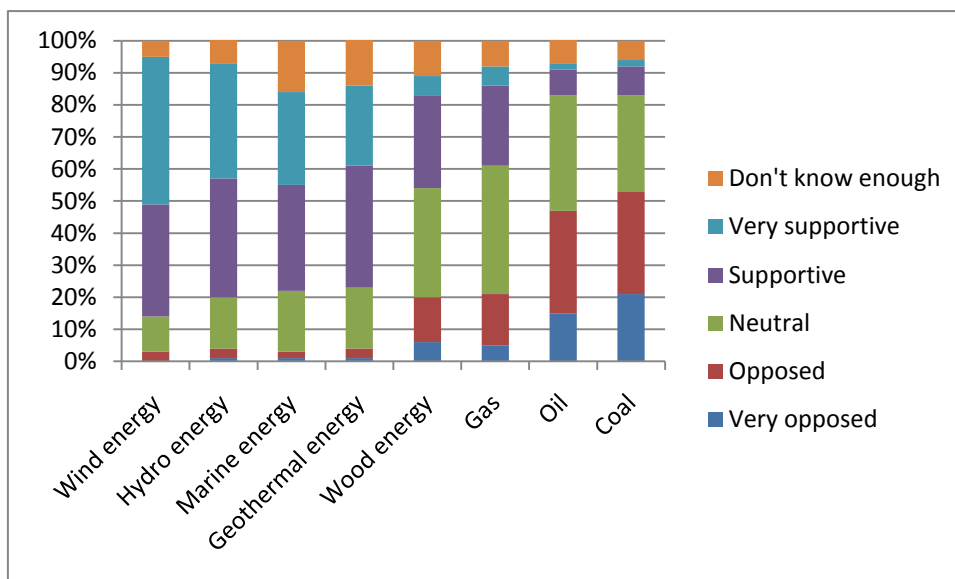
### 3.1 General public opinion on renewable electricity generation

#### 3.1.1 Support for REG in 2009

It is clear that the New Zealand public are strongly supportive of renewable energy. As shown in the table and figure below, the public in the last quarter of 2009 shows far higher approval rates for renewable energy sources/technologies than for non-renewables.

**Table 3.1a. Responses to the question: *How supportive are you of the following energy sources/technologies to generate electricity for New Zealand? (n=756). EECA Consumer Monitor Public Opinion Survey Oct-Dec 2009 (Synovate)***

	Wind energy	Hydro energy	Marine energy	Geothermal energy	Wood energy	Gas	Oil	Coal
Very opposed	0%	1%	1%	1%	6%	5%	15%	21%
Opposed	3%	3%	2%	3%	14%	16%	32%	32%
Neutral	11%	16%	19%	19%	34%	40%	36%	30%
Supportive	35%	37%	33%	38%	29%	25%	8%	9%
Very supportive	46%	36%	29%	25%	6%	6%	2%	2%
Don't know enough	5%	8%	16%	15%	11%	8%	8%	6%



**Figure 3.1a: Graph of Table 3.1a. EECA Consumer Monitor Public Opinion Survey Oct-Dec 2009 (Synovate)**

The figures show that wind energy is the most highly supported – over 80% of responses are supportive or strongly supportive, and only 3% opposed. This is closely followed by hydro energy. Marine and geothermal are also well supported, although notably the ‘don’t know enough’ is greater - not surprising given no marine energy plants are yet installed and geothermal only occurs in a few locations in the North Island. Responses for wood and gas are fairly balanced across the spectrum with 30-40% neutral. At the other extreme, over half the surveyed public oppose or strongly oppose coal and oil, and only 10% either support or strongly support them.

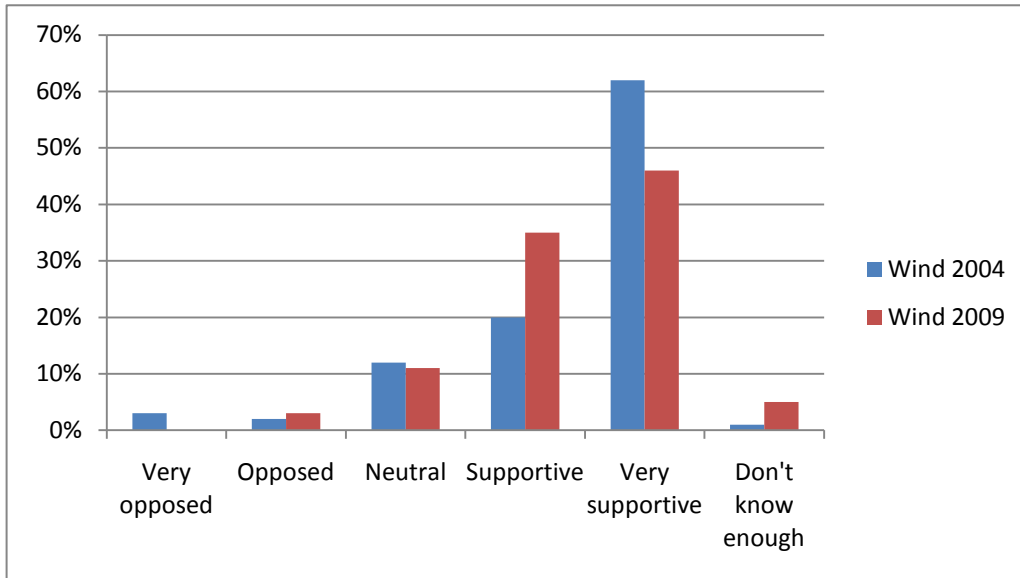
### 3.1.2 Changes in opinion over time 2004-2009

A time series can offer a much richer picture of how the public is responding to energy generation developments. The results reported above are unfortunately only the second of an intended regular quarterly public opinion survey for EECA (the first was for July-Sept 2010), which will in time give a good picture of changes in opinion over time.

The only previous similar survey undertaken for EECA was part of a UMR Research nationwide survey in 2004.<sup>25</sup> A 5-graded question, with very similar wording to the 2009 survey, asked about levels of support for wind, geothermal, hydro, gas and coal.<sup>26</sup> The following graphs show that there have been some significant shifts in support over the five years.

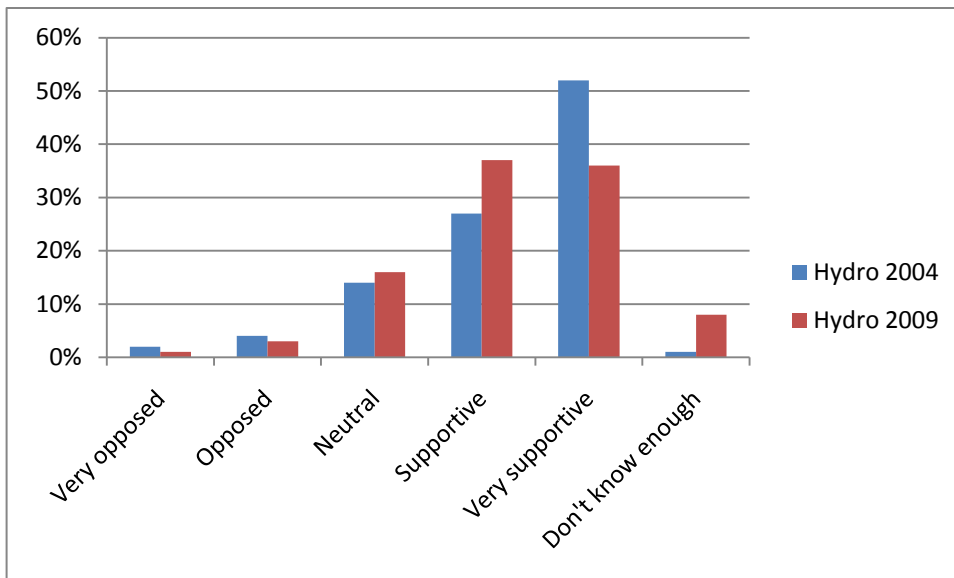
<sup>25</sup> UMR Research(2004) EECA Omnibus Results

<sup>26</sup> A key difference is that the option of ‘don’t know enough’ in 2009 was worded ‘unsure’ in 2004. We graph these both as ‘don’t know enough’ below and discuss this finding as though they meant the same thing to those doing the survey, although this may be an unsafe assumption.



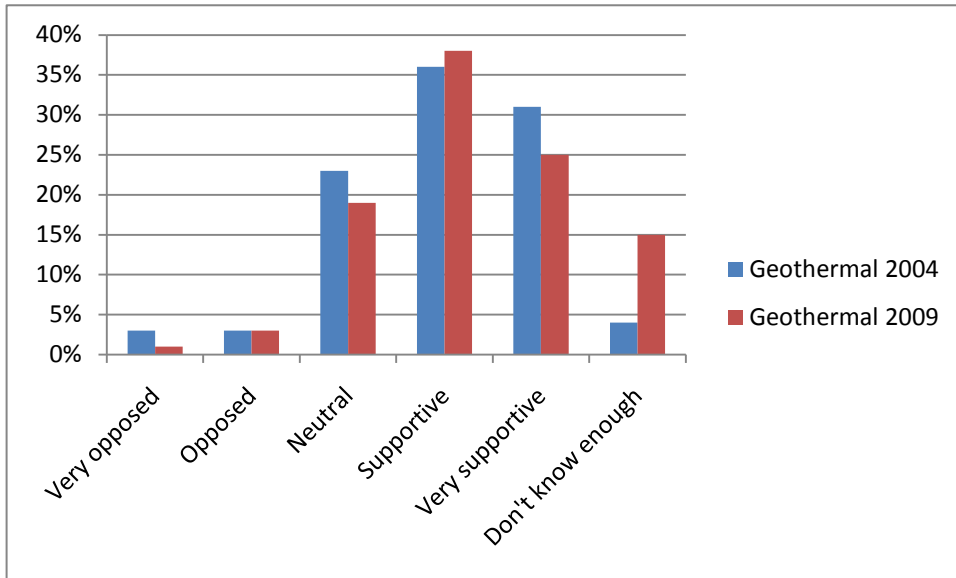
**Figure 3.1b: Public opinion on electricity generation from wind 2004 & 2009 (UMR Research 2004 & Synovate 2009 for EECA)**

For wind, the period 2004-2009 has seen a significant drop in 'very supportive' opinions (from 62% to 46%), and a similarly significant rise in 'supportive' opinions (from 20% to 35%). This suggests that support for wind is more qualified than was previously the case. 'Don't know enough' has risen.



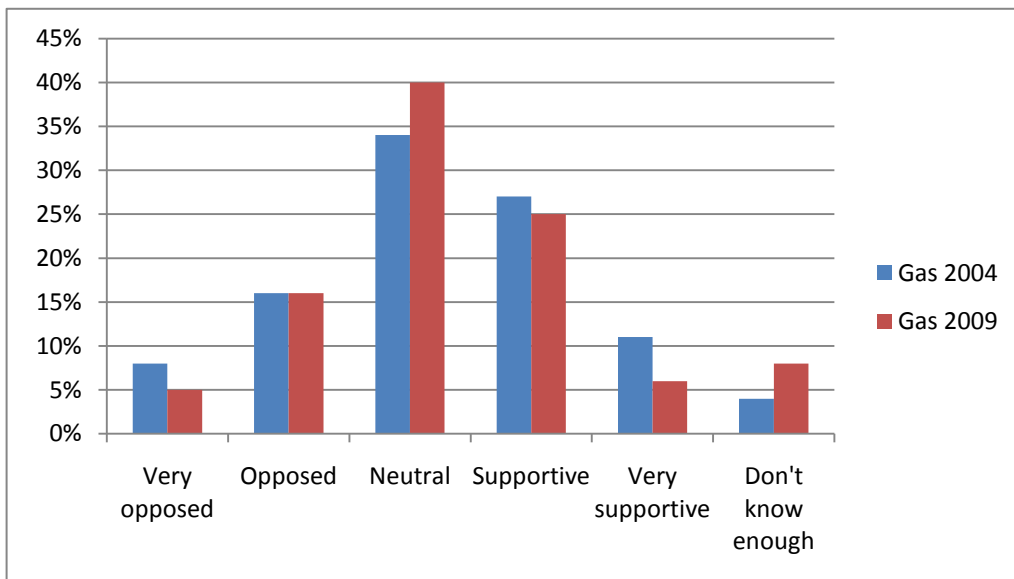
**Figure 3.1c: Public opinion on electricity generation from hydro 2004 & 2009 (UMR Research 2004 & Synovate 2009 for EECA)**

For hydro, there is a similar drop in 'very supportive' (52% to 36%) and rise in 'supportive' (27% to 37%). 'Don't know enough' has also risen.



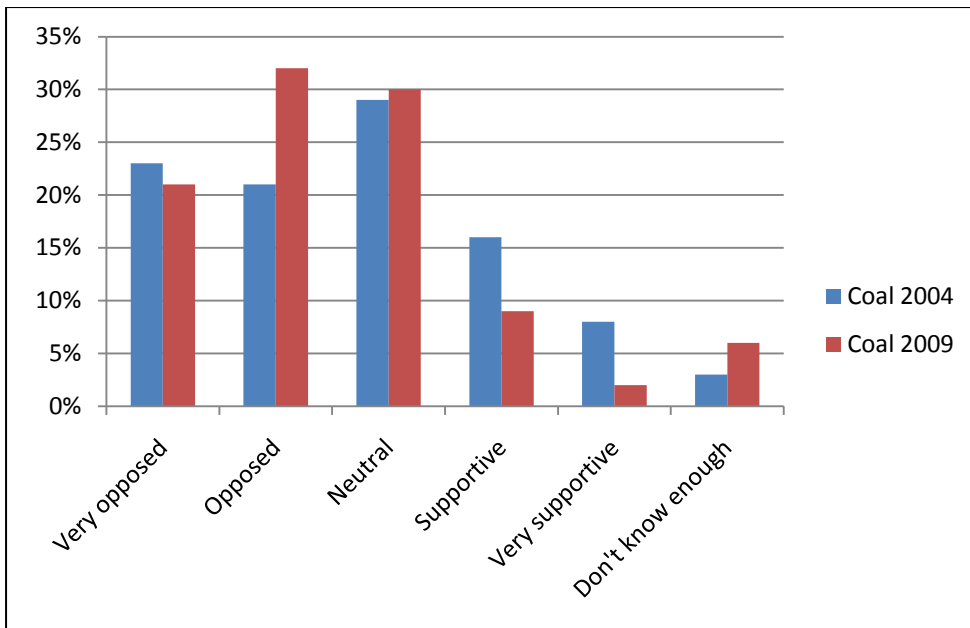
**Figure 3.1d: Public opinion on electricity generation from geothermal 2004 & 2009 (UMR Research 2004 & Synovate 2009 for EECA)**

The most notable change for geothermal is the increase from 4% to 15% of 'don't know enough'. Drops of over 5% can be seen in 'very supportive' and 'neutral'.



**Figure 3.1e: Public opinion on electricity generation from gas 2004 & 2009 (UMR Research 2004 & Synovate 2009 for EECA)**

Gas shows the greatest stability in opinion, with a slight drop in 'very supportive' and 'very opposed' and an increase in 'neutral' and 'don't know enough'.



**Figure 3.1f: Public opinion on electricity generation from coal 2004 & 2009 (UMR Research 2004 & Synovate 2009 for EECA)**

Coal shows a big increase in ‘opposed’ (from 21% to 32%) and drops in both ‘very supportive’ and ‘supportive’.

**Overall the most notable trends are:**

- While it is most dramatic with wind, every generation type shows a drop in ‘very supportive’ opinions, and in most cases an increase in ‘supportive’ opinions. This suggests a shift to more qualified, circumspect support towards energy generation.
- Coal remains the least favoured and is becoming less popular. Renewable energy generation remains more popular than non-renewable.
- There is an increase across all generation types of ‘don’t know enough’.

This purported lack of knowledge or understanding may relate somewhat to the difference in the question (see note 26 above) but also raises a flag that the public appear to feel less well informed about energy generation today than they did 5 years ago.

### **3.1.3 Support for wind 2009**

The 2009 EECA survey asked a series of quite detailed questions about public opinions of wind farms, discussed below. These questions were not asked about other REG technologies. It is noted that these questions were hypothetical rather than asked of people who were really experiencing a proposal or an actual wind farm, so need to be interpreted in this light.

**Table 3.1b. Responses to the question: *How supportive are you of ...?* EECA Consumer Monitor Public Opinion Survey Oct-Dec 2009 (Synovate).**

	Wind farms in NZ	Wind farms within 2 kms of your home	Wind farms that you can see from your home	Wind farms that you can hear from your home
Not supportive at all	3%	7%	7%	18%
Not supportive	2%	10%	9%	28%
Neutral	12%	32%	30%	28%
Supportive	36%	30%	34%	14%
Very supportive	45%	16%	17%	6%
Don't know	3%	5%	3%	5%

These results suggest that while the public are supportive of wind energy in general, they are less supportive of wind farms the closer they are to their homes. However, the results for proximity (“within 2 kms”) and visibility (“see from your home”) are almost identical, which raises questions about the relative influence and interactivity of these factors. The relationship of opposition to proximity and visibility will be discussed further in Section 4 in relation to international research findings.

Similar but not comparable questions were asked in the 2004 UMR survey, which unfortunately means the results are not able to be safely contrasted.

Other questions in the EECA 2009 survey asked about people’s main concerns about windfarms and main reasons for supporting windfarms. The most frequently identified concerns (by over 10% of respondents) were:

- ‘noise/sound’ (67%)
- ‘the look of them’ (16%)
- ‘visual impact on the land’ (14%)
- ‘location’ (16%).

The most frequently cited reasons (by over 10% of respondents) for supporting wind farms were

- ‘renewable: fresh source of renewable power’ (29%)
- ‘impact on environment harmless, doesn’t pollute the air’ (20%)
- ‘availability: plenty of it, permanent source, abundance of air’ (19%)



### **3.2 Location of existing and proposed REG**

The geographical locations of existing and proposed electricity generation plant may have some bearing on regional differences in social acceptance. Somewhat to our surprise we discovered that there were no reliable maps of existing and proposed energy generation plant, so EECA assisted by providing additional support to develop these maps.

The maps are generated from a GIS database of all existing and proposed energy generation plant over 10MW in New Zealand, developed for EECA by University of Otago postgraduate students Peter Wilson and Seth Gorrie. The GIS maps were produced using a number of data sources. These included the Electricity Commission dataset (March 2010) which was cross-checked against Transpower data on the size of plant. The assumption was made that Transpower would have more up to date data on the capacity of grid-connected plants, so this data was preferred where there was a difference. Where locations were not specified (as for most proposed generation) location data (latitude and longitude) was sourced from online sources, normally either Google Maps or the website of the company operating that power scheme. This is detailed in the 'location' column of that data set. Every attempt has been made to ensure that the data was accurate as of June 2010.

This data set is now in the hands of EECA's Research Division.

To try to understand regionality, we have included maps of both renewable and non-renewable plants for the North and South Islands. More detailed maps are shown for four regions – Bay of Plenty and Manawatu-Wanganui in which we carried out case studies (discussed in section 3.3.5 and 3.4), and Waikato and Hawke's Bay (discussed in section 3.3.5).

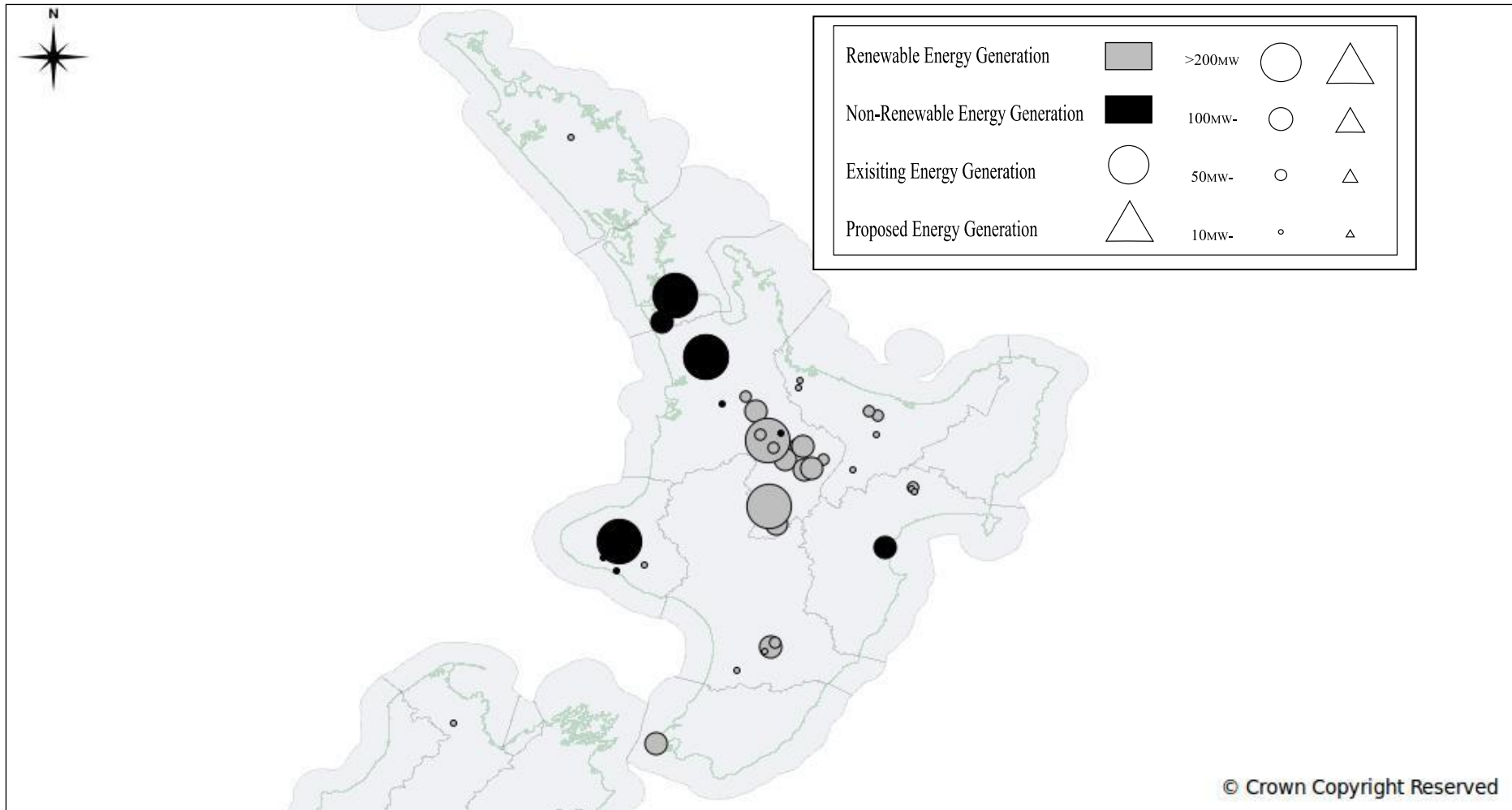


Figure 3.2a: North Island – existing electricity generation as at June 2010.

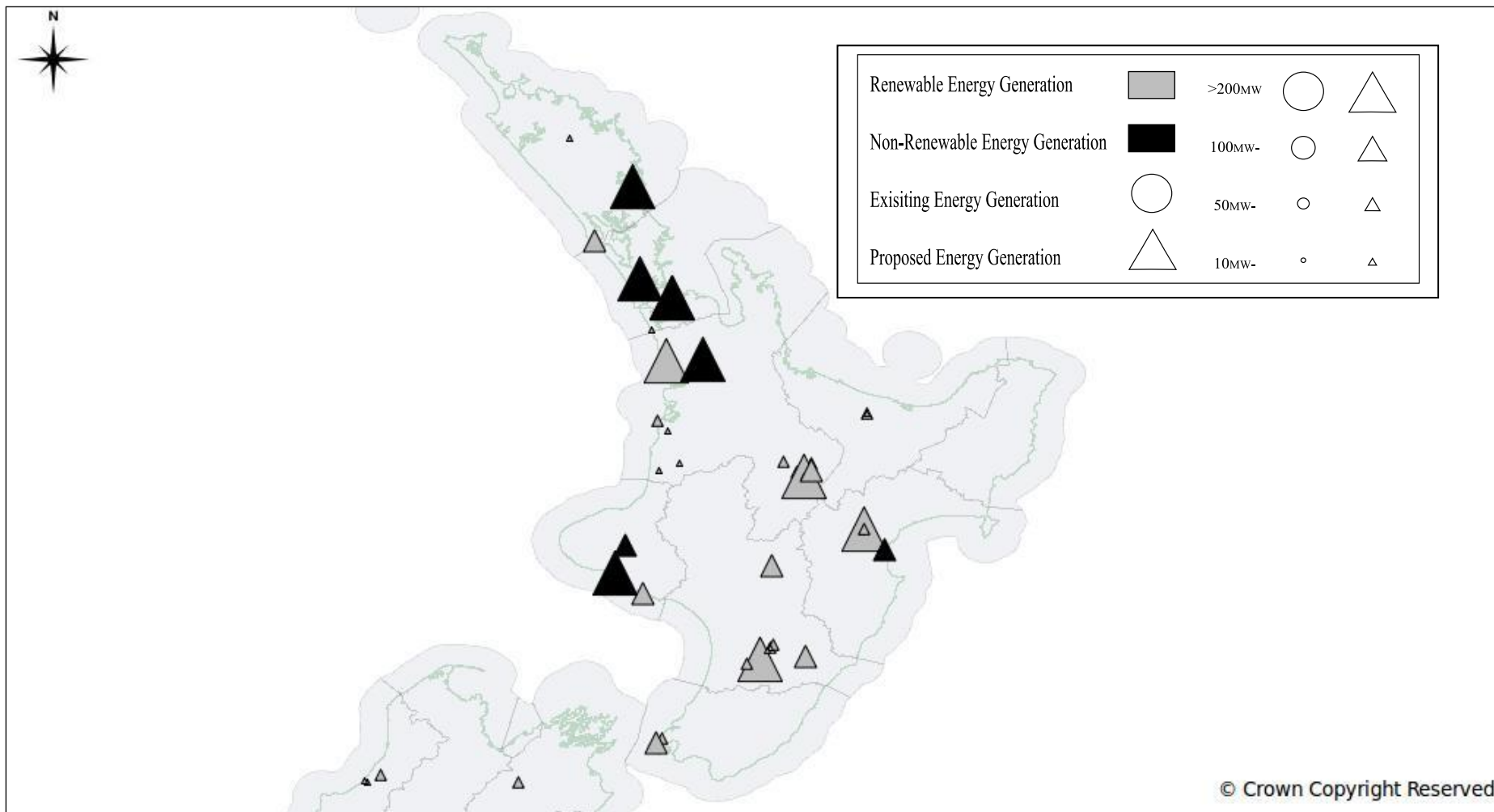


Figure 3.2b: North Island – proposed electricity generation as at June 2010. (Proposed = resource consent application is either in process, or granted consent and not yet commissioned.)



Figure 3.2c: South Island – existing electricity generation as at June 2010

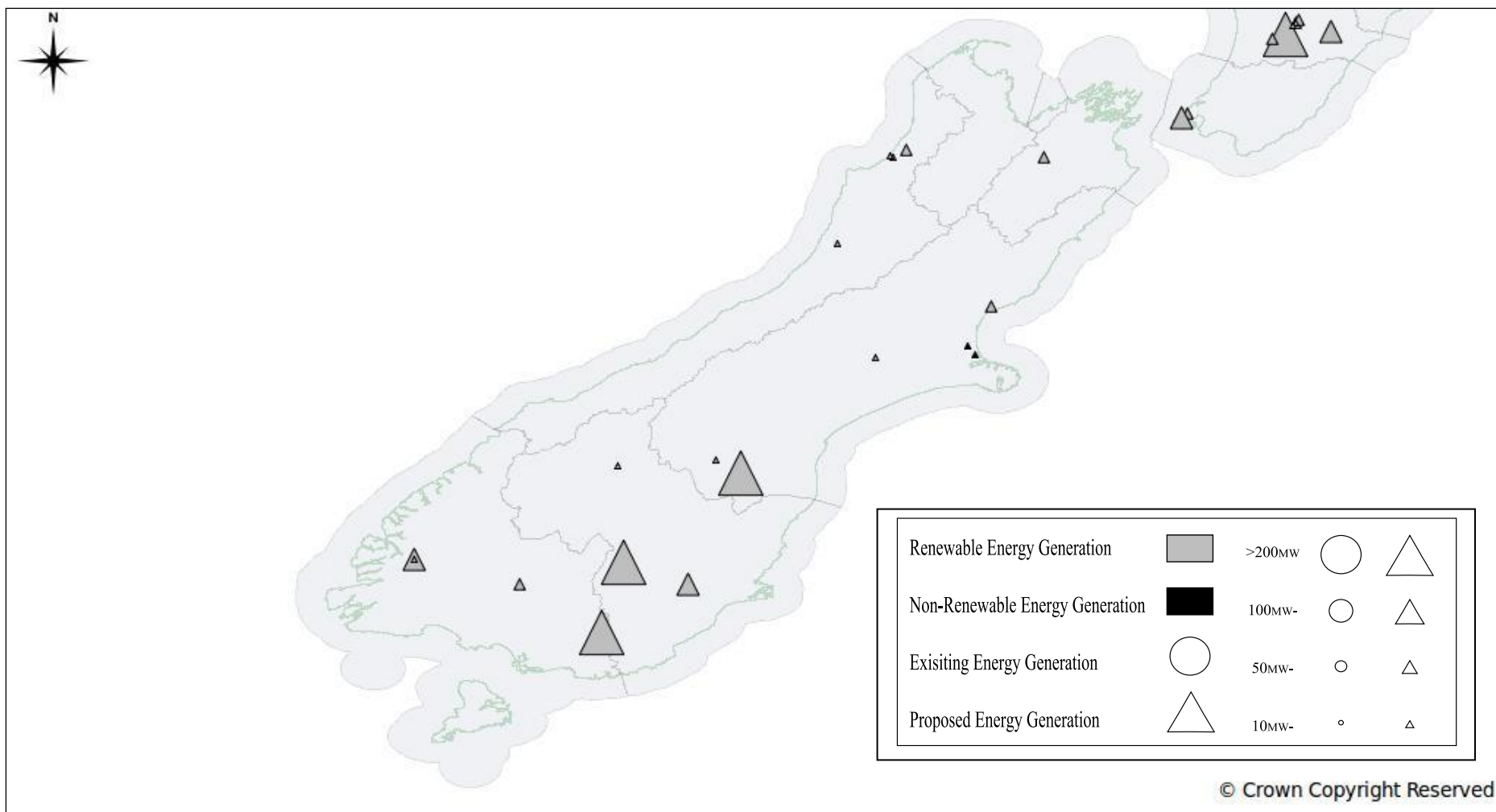


Figure 3.2d: South Island – proposed electricity generation as at June 2010. (Proposed = resource consent application is either in process, or granted consent and not yet commissioned.)

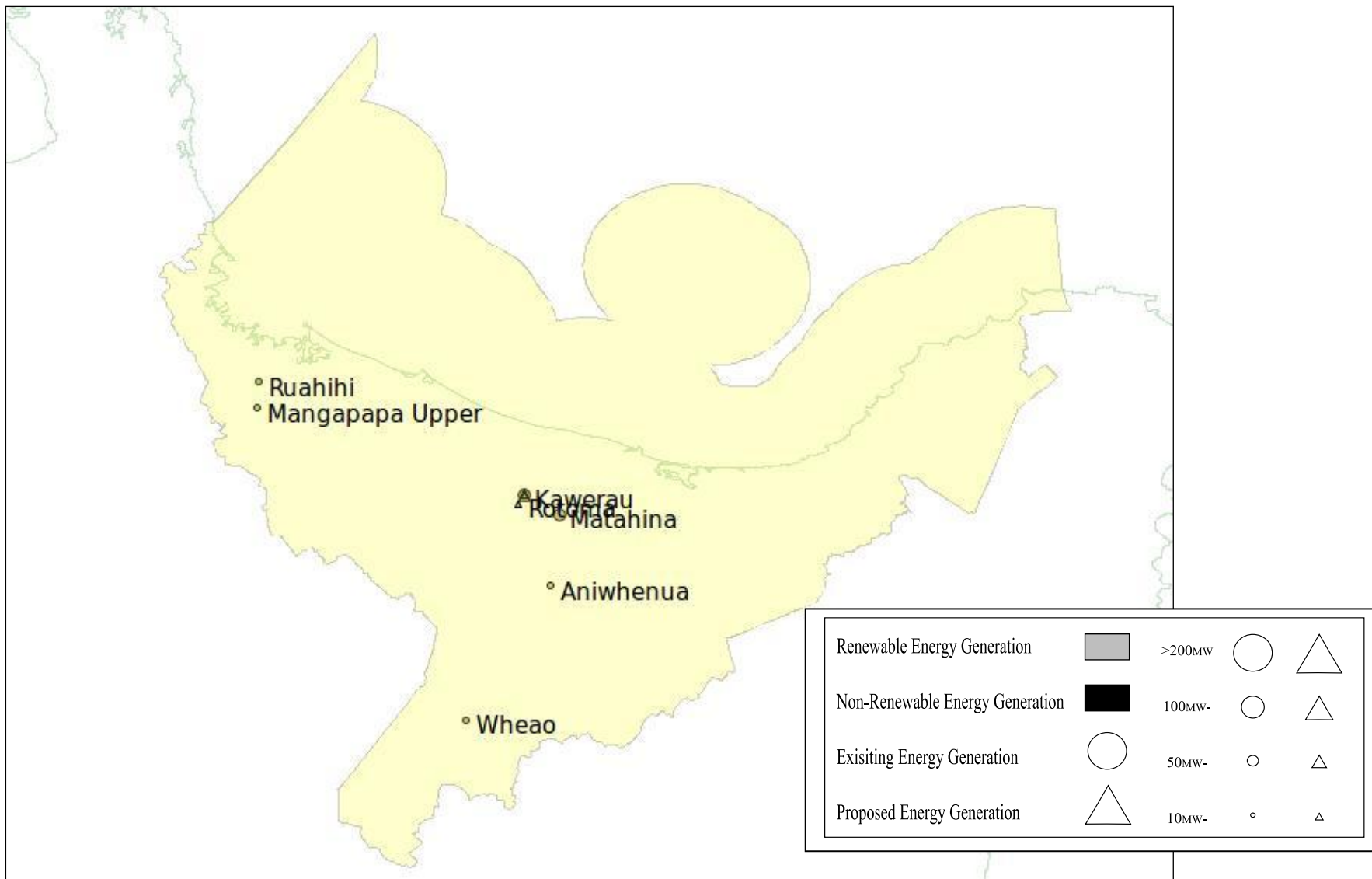


Figure 3.2e: Bay of Plenty Region: Existing and proposed electricity generation as at June 2010

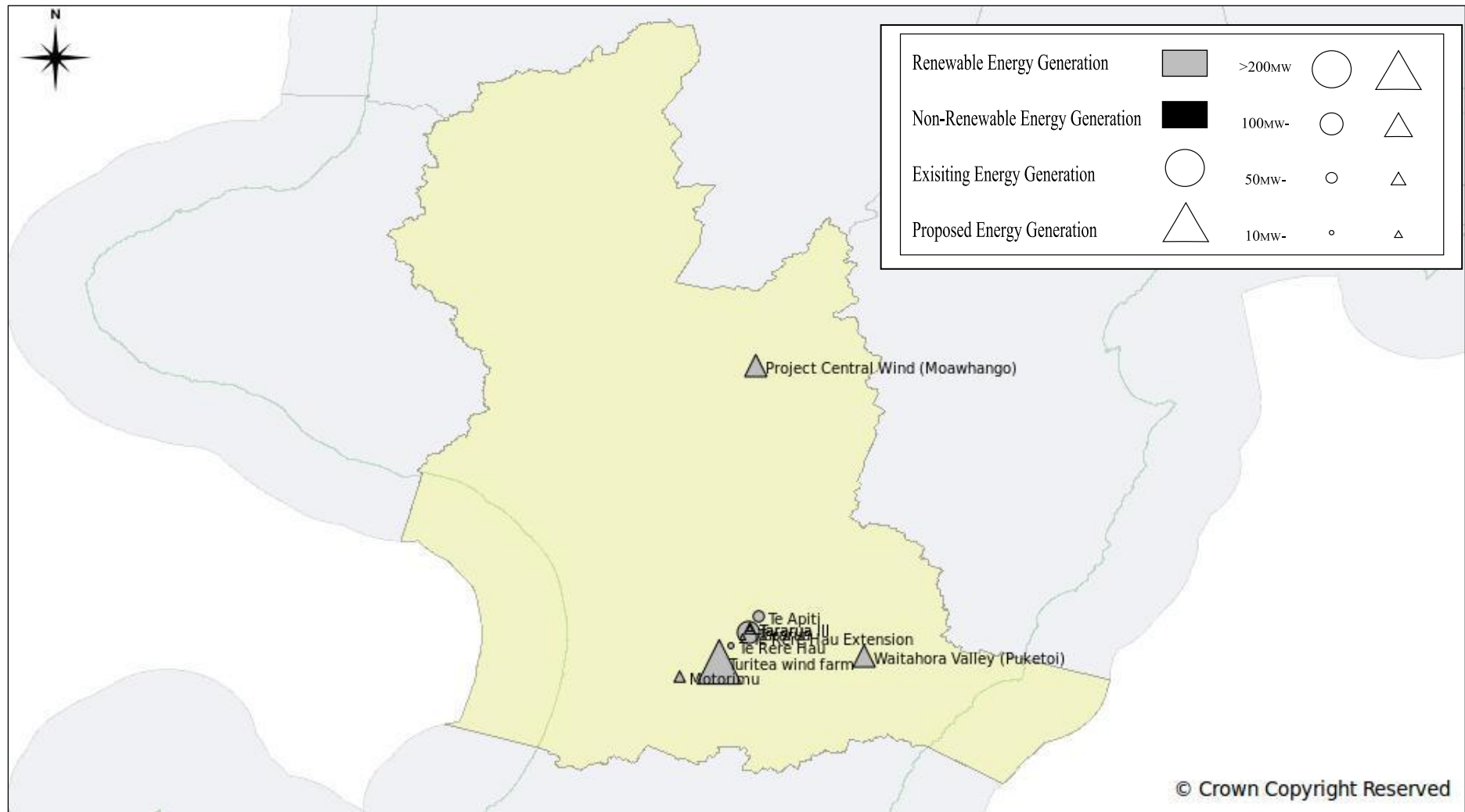


Figure 3.2f: Manawatu-Wanganui Region: Existing and proposed electricity generation as at June 2010

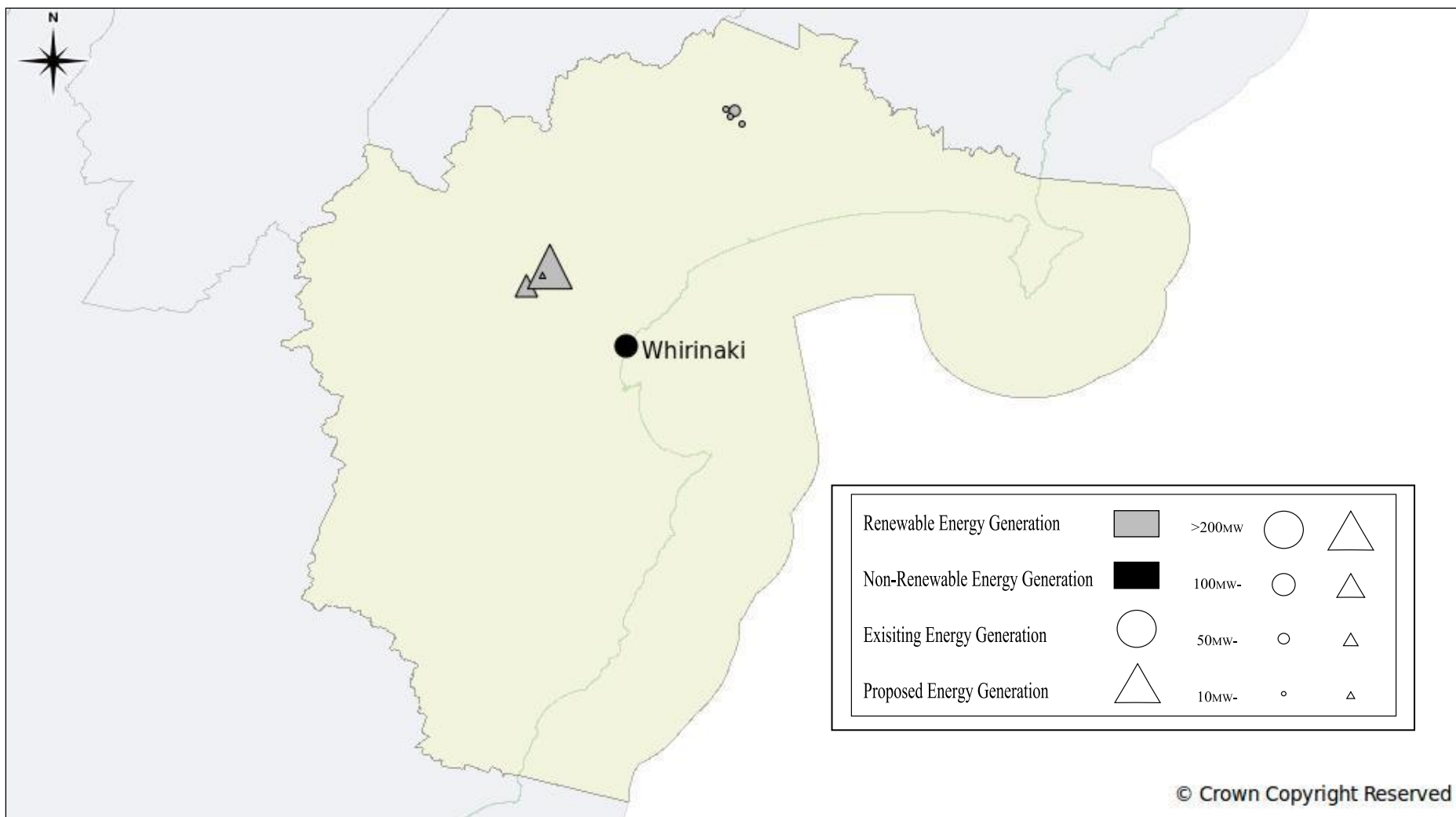


Figure 3.2g: Hawke's Bay Region: Existing and proposed electricity generation as at June 2010



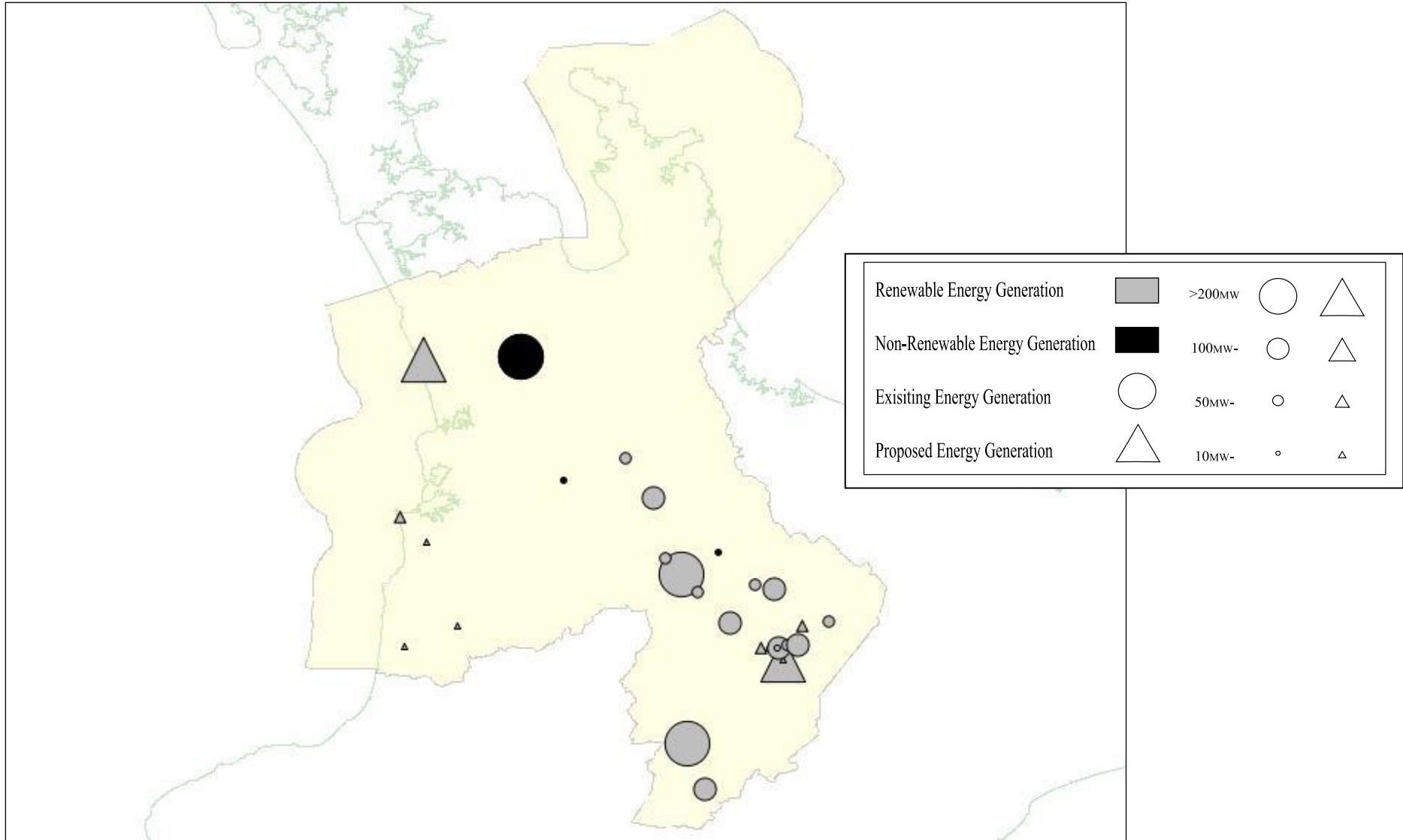


Figure 3.2h: Waikato Region: Existing and proposed electricity generation as at June 2010

### 3.3 What the numbers show

To gain an empirical picture of aspects of social responses to REG, we first developed a spreadsheet of electricity generation plant 10 MW and over that were proposed (applied for through the resource consent process) between 2000 and 2010 (note some of these were upgrades or extensions of existing plants).<sup>27</sup> This came to a total of 70 proposals, as follows:

**Table 3.3a. Consent applications for REG 2000-2010 >10MW**

Coal	2
Diesel	3
Gas	8
Geothermal	15
Hydro	13
Marine	1
Wind	28

We then sourced data on the following factors:

Developer/operator, region, location, operating capacity, current status, in-service date, council dealing with resource consent, date application lodged, number of submissions, council-level decision, date of decision, key reasons, whether appealed, appealed by whom, Environment Court decision and reference, date of decision, key reasons for appeal, key reasons for EC decision, decision points of interest, where the decision has been referred to in other decisions, whether called in by MfE or to Board of Inquiry, decision, total time taken, further appeals, summary of appeals process.

This is recorded (to the extent known) in the spreadsheet in Appendix 1 (CD).

It should be noted that there is no single agency currently tabulating data of this nature, so sourcing the information to build the table even to this extent took considerable time and effort, including directly contacting councils regarding applications in their areas, researching Environment Court decisions, and drawing from reputable internet sites (e.g. NZ Wind Energy Association, councils). Applications that have not been appealed are particularly hard to pick up, especially if these have not been proceeded with or were declined, so some in this category may have been missed. Given the time constraints of this project, and the difficulties in sourcing the data, the table is not complete, but still provides some useful findings. We suggest that EECA take over building and maintaining this database so as to be able to track trends in applications and decision processes.

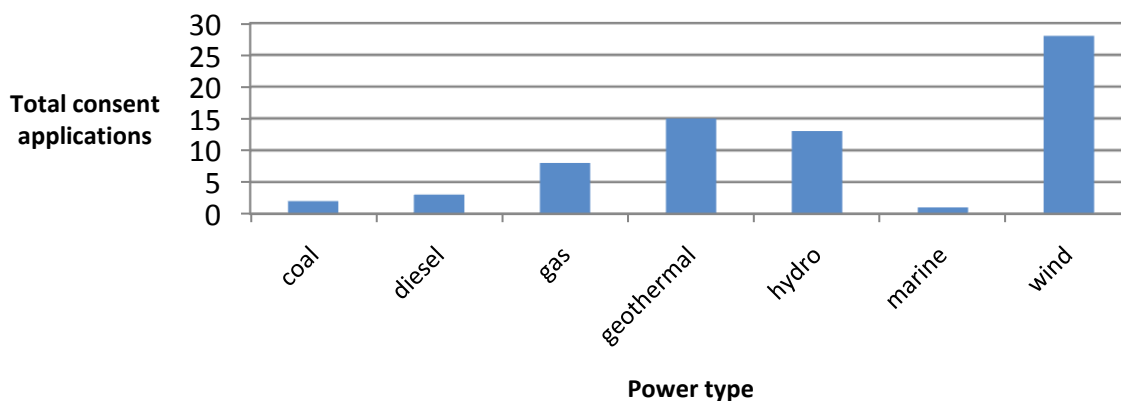
In the following discussion we attempt to offer some windows into social acceptance by showing patterns in the data on applications, appeals and submissions. Note that the graphs only show activity over the past ten years, and only include figures for plants 10MW and over. ALL applications are included, regardless of whether they have been approved, declined or not proceeded with, as they are all relevant to the big picture of social

---

<sup>27</sup> This was compiled for a wide variety of sources including Electricity Commission, NIWA, councils, Environment Court decisions, published papers and reports, research data held at Otago University.

acceptance.

### 3.3.1 Applications for consent



**Figure 3.3a: Consent applications by power type, 2000 – 2010 (>10MW)**

Figure 3.3a presents the numbers and types of electricity generation consent applications that have been made over the last ten years. **The number of wind projects proposed is almost twice that of any other power type. Geothermal and hydro are second and third respectively in terms of total number of consent applications.** Marine energy (in this case tidal turbines) is a new technology at a very early stage in New Zealand. There has been just one application for consent at Kaipara Harbour in Northland (the non-notified consent for a pilot project in Cook Strait is not included here as it is under 10MW).

Relatively few non-renewable energy consents have been sought since the beginning of the decade. However, it should be noted that the coal and gas applications are generally for larger MW plants than those for renewables. Diesel plants are usually associated with a particular industry. Average MW are as follows:

**Table 3.3b. Average MW of energy generation applications 2000-2010 > 10MW**

Coal-fired	250
Diesel-fired	59
Gas-fired	248
Geothermal	73
Hydro	97 <sup>28</sup>
Marine	200 (a single application)
Wind	138

<sup>28</sup> Note this is skewed by the abandoned 520 MW Project Aqua – the average without Aqua is 61 MW.

### **3.3.2 Processing Timeframes**

Looking just at wind farms<sup>29</sup>, which (as we will discuss below) appear to be the most contentious REG type, it is apparent that the time taken from lodging a resource consent application to final decision varies remarkably, from 1 month to 40 months (see Appendix 1 for details). The average processing time for ‘appealed’ and ‘not appealed’ wind farms (omitting those which were withdrawn or still in process, and two for which the times were unknown) were as follows:

#### **Appealed (13):**

Average = 21 months

Shortest = 9 months

Longest = 40 months (an outlier, as the next longest was 25 months)

#### **Not appealed (6):**

Average = 6 months

Shortest = 1 month

Longest = 15 months

The average overall (across both appealed and not appealed) was 16 months.

In comparison, a recent survey by the European Wind Energy Association found that it took an average of 42 months to gain consent for an onshore wind farm across the 22 EU countries studied. For onshore and offshore combined, it took an average of 26 months to gain permission for a wind farm in Britain, 29 months in France, 30 months in Germany, and 57 months in Spain. The fastest approval time is Finland with an average of 8 months.<sup>30</sup>

New Zealand’s consenting times for windfarms are therefore amongst the shortest in terms of the EU ‘league table’, with only Finland, Austria and Romania having faster average approval times, and 19 countries having slower approval times.

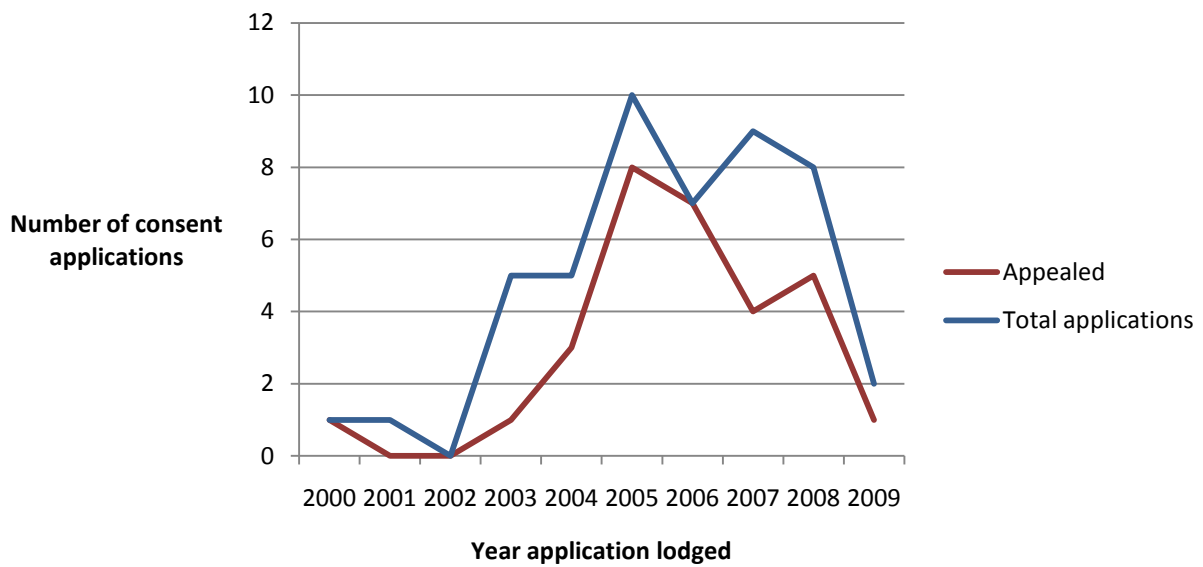
### **3.3.3 Applications for consent and appeals**

It should be noted that an appeal is not necessarily a reflection of social resistance. There can be a wide range of reasons for appeal, which includes developers appealing conditions of consent, and challenges from other parties on technical matters such as grid capacity. Also some appeals are settled by consent order rather than proceeding to a hearing, so the reasons are not always made public. In section 3.3.6 we discuss our review of certain Environment Court decisions to draw out some of the socially relevant reasons for appeal. However it is outside of the scope of this study to examine each appeal to see whether or not it was based on socially relevant (or other) grounds. This is an area that could do with further research.

---

<sup>29</sup> We had the most reliable data on wind farms.

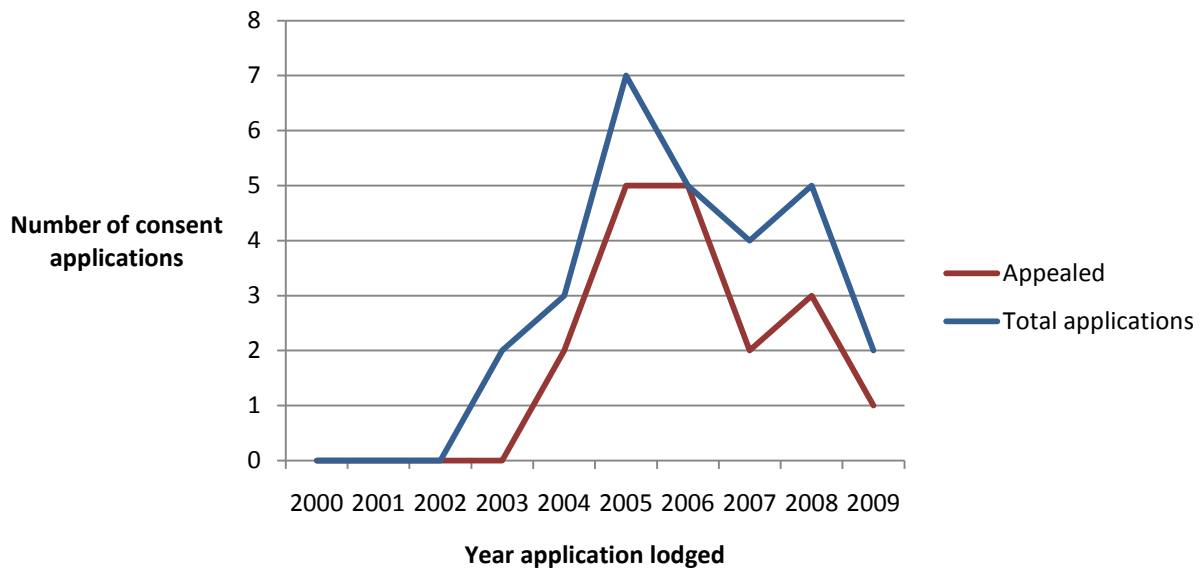
<sup>30</sup> “New league Table shows wind farm consent times across EU27 European Wind Energy Association website [http://www.ewea.org/index.php?id=60&no\\_cache=1&tx\\_ttnews\[tt\\_news\]=1834&tx\\_tt](http://www.ewea.org/index.php?id=60&no_cache=1&tx_ttnews[tt_news]=1834&tx_tt)



**Figure 3.3b: Total applications and total appeals, all power types 2000-2009 (>10MW)<sup>31</sup>**

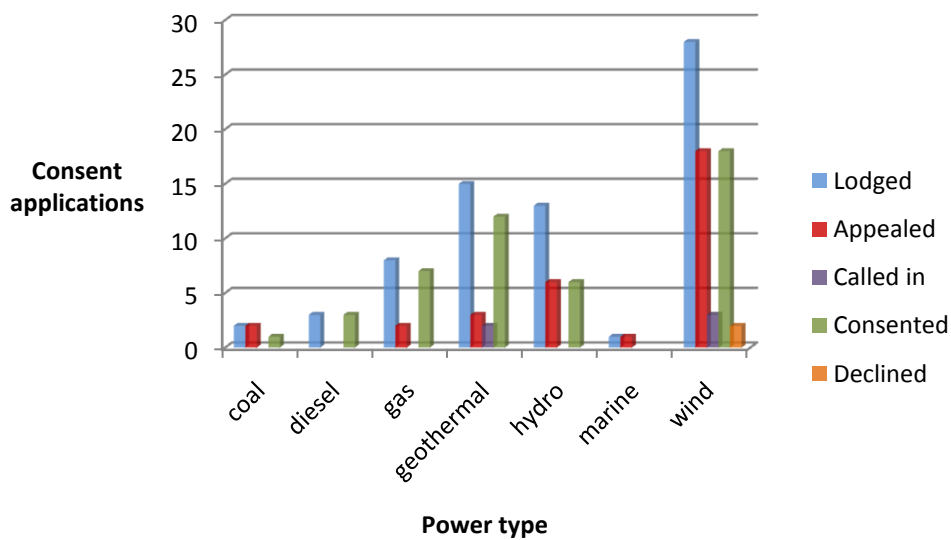
**Figure 3.3b shows a fall-off in applications since a peak in 2005-2006.** The graphs should not be read to suggest that appeals in 2009/2010 are necessarily dropping as significantly as it seems, because consent applications lodged earlier may not yet have been decided at the council level. **The notable trend is the correlation between numbers of applications and appeals, although this association is less close after 2006.**

<sup>31</sup> Note: this does not include the 20 projects for which the date of application is unknown - mostly geothermal and non-renewable – so the graph represents only 50 projects. Data on the RMA processes for these unknown projects is harder to find – we have searched Environment Court decision databases and not found evidence of further geothermal appeals. This is an area that requires more research.



**Figure 3.3c: Wind farm applications and appeals 2000-2009 (>10MW)**

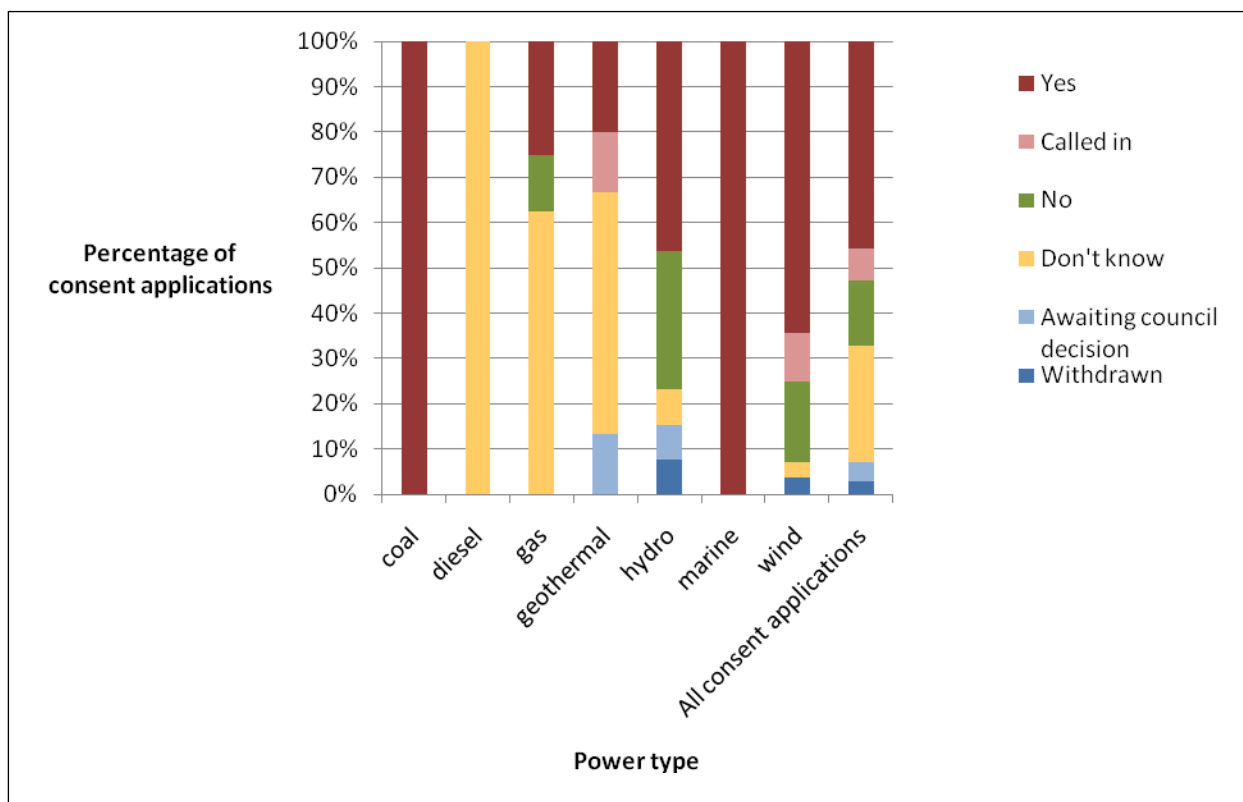
Figure 3.3c above shows that most of the appeal activity since 2004 has been with wind farms.



**Figure 3.3d: Status of consent applications by REG type 2000 – 2010 (>10MW)**

Broken down by REG type, it is again clear that wind has faced the greatest number of appeals over the last decade. It is also the only power type where resource consents have been declined over this period, these being two applications for Te Waka wind farm. (Note Project Hayes has been declined consent by the Environment Court, but the decision is

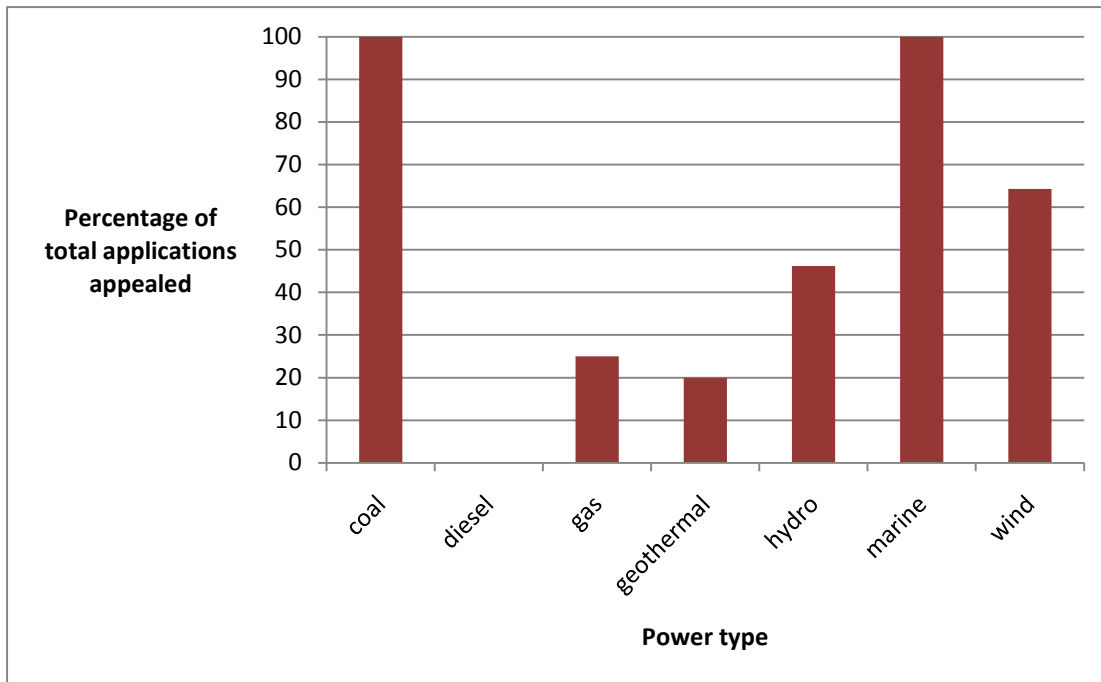
under appeal to the High Court). Only geothermal and wind proposals have been called in.<sup>32</sup>



**Figure 3.3e: Proportion appealed or other status 2000 – 2010 (>10MW)**

Figure 3.3e shows the *proportion* of applications of a given type that have been appealed over the 2000-2010 period (yes = appealed) or are in other categories. As noted earlier, some data is missing (yellow = don't know) which may skew the results. Note also that there have been only three diesel, two coal and one marine consent applications in the last ten years (see Table 3.3a).

<sup>32</sup> Note regarding called-in projects: The Resource Management Act 1991 (Act) provides for the Minister for the Environment to intervene in the decision making process for proposals of national significance. From the 1st October 2009, applicants with proposals of national significance have also been able to lodge directly with the Environmental Protection Authority (EPA) as a called-in project. Since this change was made, five renewable energy projects have been called in - three wind farms (Te Waka, Turitea and Hauāuru mā raki) and two geothermal power station proposals (Te Mihi and Tauhara II).



**Figure 3.3f: Percentage appealed by power type**

Figure 3.3f strips out the other categories to make it easier to contrast the appeal rates of different energy generation applications. **Coal and marine show a 100% rate of appeal, but this may be misleading given the small number of consent applications (see Table 3.3a).**

**Wind is proportionately the next most appealed power type**, with nearly 65% appealed. Hydro follows, with around 45% appealed. As noted earlier, information on appeals for some geothermal projects is missing, and this may be skewing the data to some degree, but it appears to be less contentious. Anecdotal evidence suggests that appeals on geothermal developments tend to be around ownership of the resource or the potential to develop the geothermal resource rather than on social acceptance issues.<sup>33</sup>

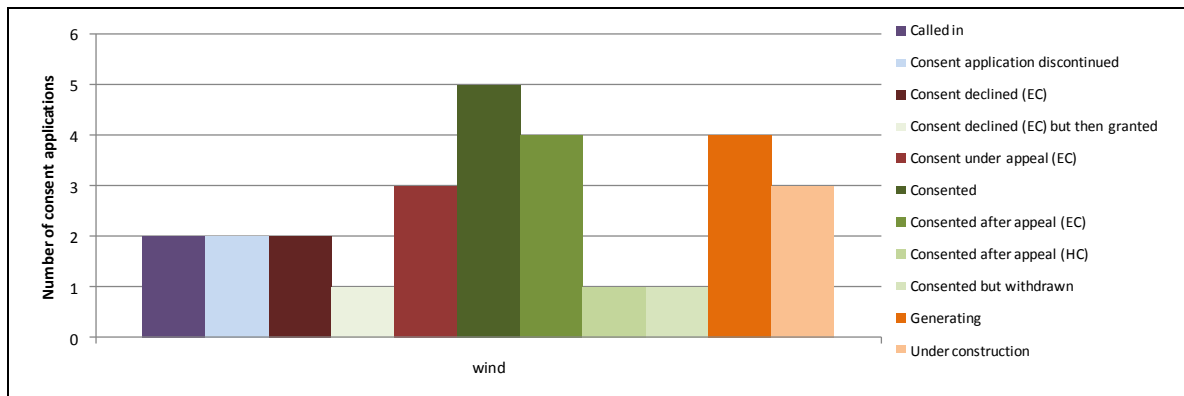
**The correlation between number of projects and likelihood of appeal is not direct.** Figure 3.3a shows that the number of geothermal and hydroelectric consent applications over the last ten years is similar, and yet Figure 3.3f shows that the hydro projects have faced significantly more appeals on decisions.

**Overall, almost half of all REG consent applications lodged are appealed.** The fate of some 28% of applications through the RMA process is currently unknown, so the number may be higher.

<sup>33</sup> See interviews section 3.4.

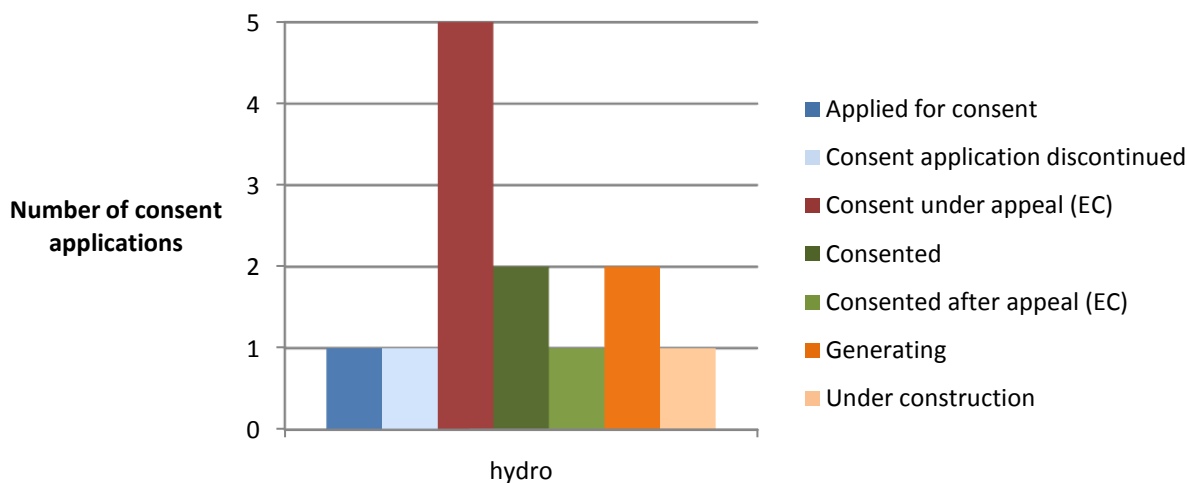


### 3.3.4 Wind farms



**Figure 3.3g: Wind – current status of applications lodged between 2000-2010 (>10MW)**

Figure 3.3g shows the current status of wind farm applications that were made between 2000 and 2010, and demonstrates that at a given point in time applications can be at a number of different stages. Even after consent has been granted, the existence of a resource consent does not necessarily mean that a plant will be built or be operated, with some consented applications ‘mothballed’ until market conditions are suitable.



**Figure 3.3h: Hydro – current status of applications lodged between 2000-2010 (>10MW)**

The detailed picture for hydro is not as complex as for wind, in part because there have been fewer projects in the last ten years. It is important to note that the projects registering as not appealed are all retrofits or upgrades, rather than completely new projects. The only discontinued hydroelectric project is Project Aqua.

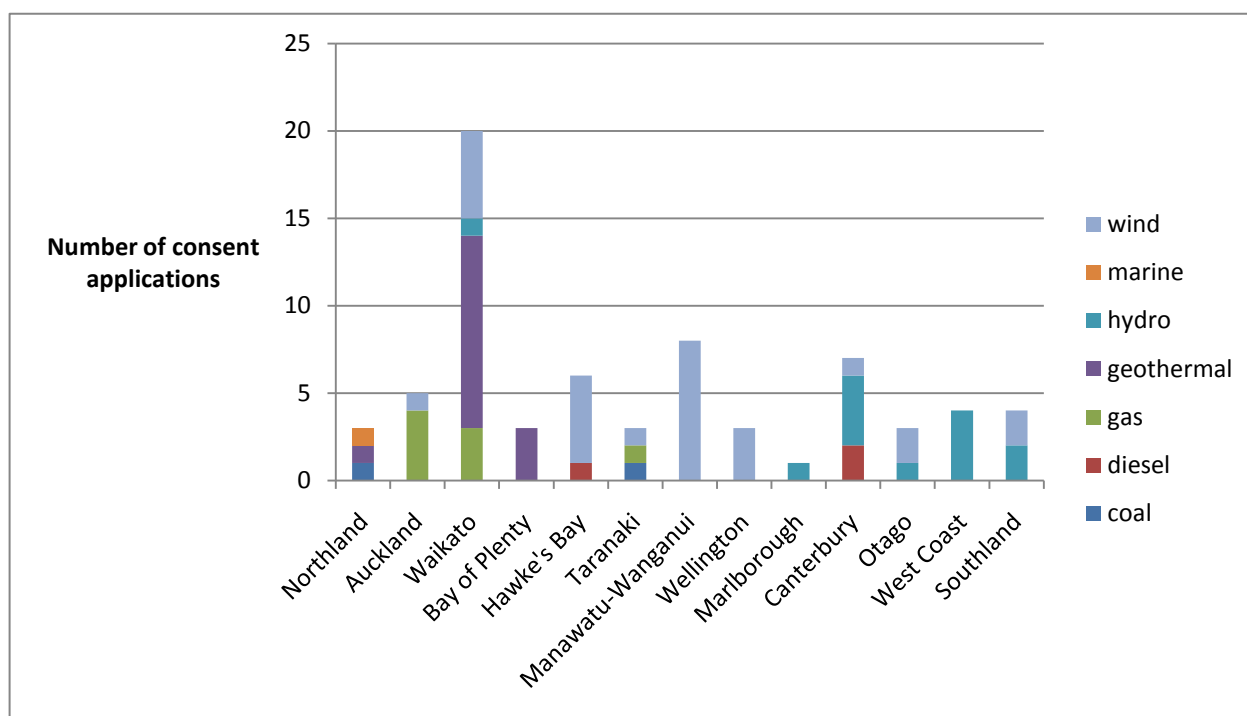
**Table 3.3c. Scale of wind farms vs appeals 2000-2010**

	Appealed	Not appealed	No decision yet	Referred to EC
10-50 MW	4	3	0	0
51-100 MW	5	2	0	0
101-200 MW	5	0	0	1
200+ MW	4	0	2	0

Table 3.3c attempts to reveal whether scale has an influence on appeals, looking only at wind farms (for which we have the best data). The only ‘not appealed’ applications are in the 10-50 and 51-100MW size ranges. While we have not analysed whether the appeals are socially influenced, there does seem to be a relationship between lack of appeals and smaller scale developments.

### 3.3.5 Regional differences

The regional spread of 2000-2010 project applications across New Zealand varies considerably by type and number of applications. This can be seen in the maps (showing both existing and proposed generation) in section 3.2 as well as in Figure 3.3i below.



**Figure 3.3i: Consent applications by region 2000 – 2010 (>10MW) (where applications are in more than one region, the lead agency is shown).**

The Waikato region clearly dominates, having the vast majority of all geothermal projects in the last 10 years, plus a number of wind projects, as well as some gas and hydro (see also

Figure 3.2h for map of Waikato). Manawatu-Wanganui dominates in wind projects, with Hawke's Bay and Waikato not far behind, and with several applications in Otago, Southland and Wellington as well. Canterbury and the West Coast have seen most of the hydro applications. The only >10MW marine project has been in Northland.

We discuss four regions of interest in more detail below.

### **Bay of Plenty** (see Fig 3.2e for map)

The Bay of Plenty is characterised by having only geothermal power stations. There are 6 existing geothermal plants in the 10-100MW range, and one further one awaiting consent, all in quite dispersed locations. Three applications have been made in the past decade, of which one was appealed but was settled prior to hearing. This is a region where there appears to have been relatively little public contention through the resource consent process, although as our case study shows (section 3.4) this does not necessarily mean uniform acceptance. As will be discussed in section 3.4, a number of geothermal power stations involve joint ventures or other financial arrangements with Māori groups who own or have interests in the land or resource.

### **Manawatu-Wanganui** (see Fig 3.2f for map)

The Manawatu-Wanganui region has seen the highest number of wind projects of any region over the past 10 years, and it is evident that wind projects here are becoming increasingly contentious. To illustrate, six separate applications have been made for wind farms in the Tararua Ranges. We do not have the submission figures for all of the windfarms, but of these, the first proposal drew 24 submissions (Tararua Stage 1 in 1996). Tararua III (lodged in 2005) received 340 submissions, of which 230 were opposed. Motorimu, lodged in 2006 with a proposed operating capacity of 68MW, resulted in 165 opposing submissions out of a total of 220. The sixth proposal in 2008 (Turitea) drew 655 submissions, and its re-design by developer Mighty River Power attracted 717 submissions. In his evidence to the Turitea Board of Inquiry, James Baines noted that while two earliest proposals drew more supporting submissions than opposing, the latest two proposals overwhelmingly drew opposing submissions, outnumbering those in support by between 3:1 and 4:1.<sup>34</sup> Since then, the extension of Te Rere Hau (lodged at the beginning of 2010), a relatively small extension at 28MW, generated 85 submissions of which more than 80% were in opposition. This suggests that cumulative effects are starting to whittle away social acceptance.

While most of the Manawatu-Wanganui wind farms are around the Tararua Ranges, the outlier is Project Central Wind at Moawhango, a 52-turbine proposal for which the consent application was lodged in 2008. This attracted 69 submissions and strong opposition from a group, the Rangitikei Guardians. This group was interviewed for section 3.4 of this report.

---

<sup>34</sup> Statement of Evidence of James Baines before the Board of Inquiry for the Turitea windfarm, 22 May 2009, p 50.

### **Hawke's Bay** (see Figure 3.2g for map)

Hawke's Bay is another region with a number of wind farm applications, and is the only region where resource consent applications for wind have been declined to date (i.e. declined after any appeals). A wind farm proposal at Te Waka on the Maungaharuru Range in Hawke's Bay was twice declined consent – once on its original proposal by the Environment Court and then on a separate, revised proposal also by the Environment Court after being called in by the MfE. One other wind farm, Waitahora Valley on the Puketoi Range also in Hawke's Bay, was declined at the council level but consent was subsequently granted.

The region seems to be of interest to a number of power companies for future wind development. The 'big five' gentailers (Mighty River Power, Meridian Energy, TrustPower, Contact Energy and Genesis Energy) and Transpower have made submissions on the proposed District Plan relating to provisions that might affect the establishment of wind farms. For example, TrustPower, supported by Contact, Meridian and Genesis, has asked for "skyline" to be defined with much greater certainty, and for references to "skyline" of the Tararua, Ruahine, Puketoi Ranges and the Manawatu Gorge to be deleted. This will be an interesting region to track as it will potentially face the 'cumulative' problem in years to come.

### **Waikato** (see Fig 3.2h for map)

As can be seen in Fig 3.3h, Waikato has had 20 applications 2000-2010, the largest number by far of applications for REG this decade. Applications overall appear to have been far less contentious, with only 4 appeals (1 geothermal, 1 hydro and 2 wind). Two geothermal and one wind application have been called in. For 7 geothermal applications, it has not been possible to determine whether some of these projects were appealed (while no Environment Court decisions were available, some may have been appealed and then resolved before a hearing, as was the case for Kawerau). It would be interesting to examine Waikato in more detail to determine why there is possibly greater social acceptance despite the large number of applications.

**Overall, it is clear that there are considerable regional differences in generation type, level of new project activity, and social acceptance - if submissions and appeals are some measure of the latter. There are variable relationships between numbers of applications and social acceptance – despite the high number of applications in the Waikato, there appears to be relatively little contention, while in Manawatu-Wanganui the concentration of wind farms in one part of the region is starting to generate considerable resistance. The basis of these regional differences (whether it relates to number, scale, REG type, regional 'culture' or other factors) is worthy of more study.**

### 3.3.6 Submissions

Although numbers of submissions are often taken to be an indication of level of intensity of public feeling about a proposal, this can be misleading. For example, Project Central Wind (lodged 2008) received one of the lowest numbers of submissions of all the wind projects examined, with those against a smaller number than those for, and yet was still appealed to the Environment Court by a community group. The project was located in a rural area, with a small population, and most of the supporting submissions were from distant submitters.

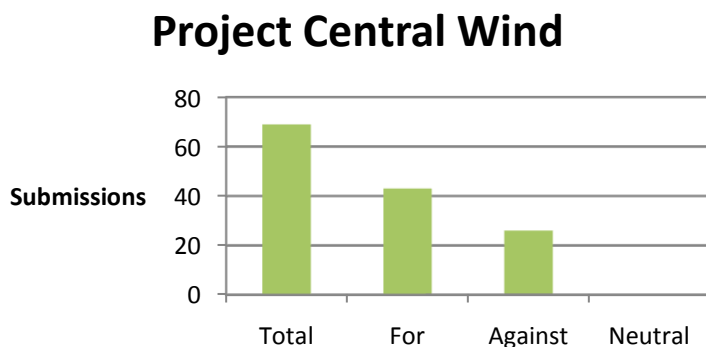


Figure 3.3j: Submission breakdown for Project Central Wind

In contrast, Project West Wind received a record number of 3760 submissions, of which an overwhelming majority was in support or conditional support. This was appealed by public groups and individuals as well. The high number of submissions may relate in part to the close proximity of the site to Wellington, and thus a greater catchment of interested public.

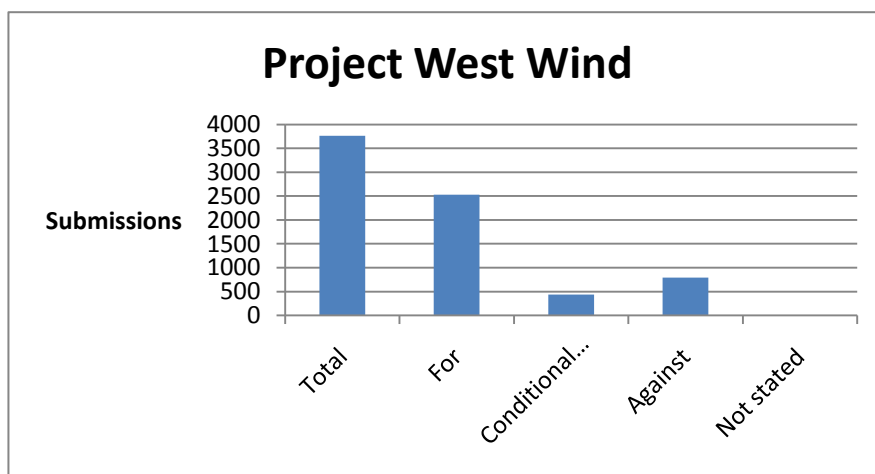
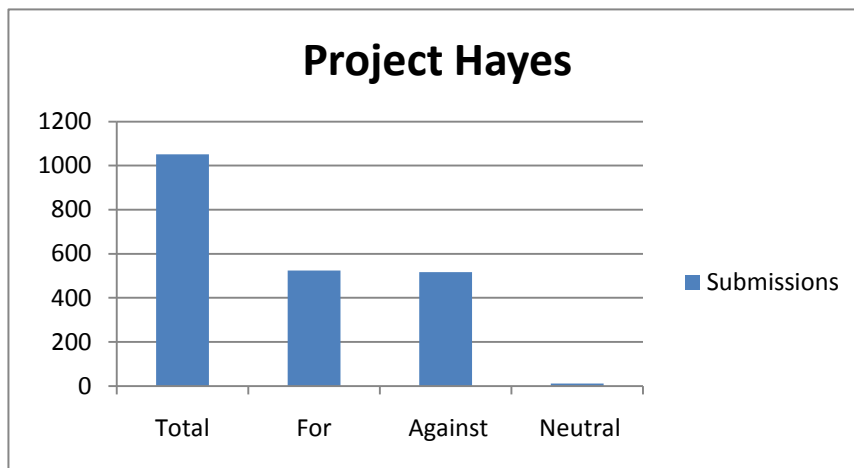


Figure 3.3k: Submission breakdown for Project West Wind

However proximity to population centres is clearly not necessarily the main driver of large numbers of submissions. Project Hayes, in a very isolated part of Central Otago, drew 1051 submissions, of which only 20 were from within a 20km radius. Supporting and opposing submissions were almost even.



**Figure 3.3I: Submission breakdown for Project Hayes**

**While further work needs to be done on this matter, we suggest that while proximity to large population centres may result in higher submission numbers, it does not necessarily result in a higher proportion of opposition. Distance from population centres is not a predictor of numbers of submissions, nor of strength of support or opposition.**

One accusation that is made regarding both supporting and opposing submissions is that they are often simply ‘repeats’ of the same submission put out by campaigners on one or other side of an issue, with the implication that these have less value than personally crafted submissions.

To see to what extent ‘repeats’ occur, and whether it is more prevalent with support or opposing submissions, we looked at Project Hayes (Otago) which generated 1051 submissions, of which 50% were in support and 49% in opposition (1% neutral).

Of the 524 opposing submissions, 170 were repeats in the sense that they shared the same word content and format, and did not contain any further personal submissions from the submitter. There were 7 different ‘repeat’ types

- Type 1 – 30 submissions
- Type 2 – 84 submissions
- Type 3 – 42 submissions
- Type 4 – 8 submissions
- Type 5 – 2 submissions
- Type 6 – 2 submissions
- Type 7 – 2 submissions

A further 9 were simply pre-ticked submission forms with no explanatory content.

Of the 516 supporting submissions, 274 were identical pre-ticked submission forms with no

explanatory content. Another 4 submissions shared the same word content and format.

Eleven submissions neither supported nor opposed. Of these, 3 were repeat submissions.

In summary, just over half of the supporter submissions (53%) were identical submission forms with ticks rather than explanations/reasons. Fewer than 2% of opposing submissions were pre-ticked forms, but a further 32% were one of 7 variants of explanations/ reasons.

**If Project Hayes is typical of other REG projects, it seems that the phenomenon of copied content may be common on both sides, although more common amongst supporters. We do not take this to mean that these submitters lack opinions on the proposal, or are being used as tools by action groups. It is more likely that having a pre-worded submission is an incentive to make a submission because the ‘hard work’ is eliminated of thinking what to say and writing it in appropriate words – something that is likely to be challenging for most New Zealanders who have not done this before.**

### ***Section 3.3.6 Appeals***

A brief review of decisions by the Environment Court on some of the more contentious wind energy applications (Project Central Wind, Project Hayes, Titiokura/Te Pohue, Awhitu, Project West Wind, Motorimu, Te Waka) was undertaken to identify at a high level the key socially relevant reasons the Court has given for decisions. In Table 3.3b below is a breakdown of the key reasons for each of these decisions (see Appendix 1 (CD) Sheet 1, column AC for more details). The table attempts to reflect the main reasons given in the summing-up as being crucial to the decision as a whole, rather than issues that were discussed in the main body of the decision.

The reported decisions were the following:

- *Rangitikei Guardians Society Inc v Manawatu-Wanganui Regional Council & others* C14/2010 (Project Central Wind)
- *Maniototo Environmental Society Incorporated and others v Central Otago District Council & Otago Regional Council* C103/2009 (Project Hayes)
- *Unison Networks Limited v Hastings District Council* W011/2009 (Titiokura/Te Pohue)
- *Genesis Power Limited v Franklin District Council* [2005] NZRMA 541 (Awhitu).
- *Meridian Energy Ltd & Others v Wellington City Council & Wellington Regional Council* W31/2007 (Project West Wind)
- *Motorimu Wind Farm Ltd v Palmerston North City Council & Horowhenua District Council*. W67/2008 (Motorimu)
- *Unison Networks Ltd & others v Hastings District Council* W58/2006 (Te Waka 1)
- *Unison Networks Ltd v Hasting District Council* W11/2009 (Te Waka 2)

**Table 3.3d. Key reasons for decision in seven Environment Court decisions on wind farms**

<b>Siting issues generally</b>	1
Landscape values	6
Cultural values	1
Ecological values	1
Recreational values	1
Historic values	1
Amenity values	3
<b>Plant issues</b>	
Scale of plant/development	2
Location of specific elements of the plant	1
<b>Impacts of the operation of the plant</b>	
Noise	1
<b>Cumulative issues</b>	2
<b>Policy fit</b>	
Relationship to district policy	3
Relationship to regional policy	4
Relationship to national policy	3
<b>Belief in efficacy of the technology</b>	
Addressing national issues	4
Addressing global issues	2
<b>Ideology</b>	
Relationship to clean green image	1
<b>Influence of developer</b>	
Quality of consultation	1
<b>Flow of benefits, (e.g. electricity, money)</b>	1
To local community	1
To region	1
To nation	2

Siting issues were important in every case, particularly relating to landscape but also referring to spatial qualities generally, such as historic and amenity values. Scale and location of specific parts of the plant were important in some cases, as were cumulative issues and in one case a direct impact of the plant. Attention was also paid to policy fit (with national/regional/district policy) and the ability of the technology to address national and global imperatives for renewable energy and reduction in greenhouse gas emissions. The quality of consultation was raised in one case, and the flow of benefits was also relevant.

### **Landscape/Siting**

**Siting was a key issue in each of these wind farm cases, and landscape qualities were the most frequently discussed aspect of siting.** At times landscape was discussed purely in terms of its 'natural' qualities, and at other times issues such as cultural, historic or amenity



values were considered in landscape terms.

The places considered as potential windfarm sites are often farmland with pasture as the predominant vegetation. The Court has found this less than pristine nature to be a "rural working landscape"<sup>35</sup>, which a wind farm could easily be part of and enhance. For example in the Titiokura/Te Pohue case, the Court said:

"...a windfarm would add to the diversity of uses in the rural area, making use of the wind, a natural resource, without significantly impacting on more traditional forms of production from rural land."

However, the Court discussing the Te Waka (revised) case took issue with this broad-brush thinking:

"We also have some concern about evaluating landscapes using (predominantly) vegetation patterns as the most significant criterion. May there not be instances where the landform itself is so striking, even when clothed only by pasture, that the landscape is outstanding?"

In the decision on the Project Hayes wind farm, the Court also found this assumption that farmland is always suitable for development a problem:

"Meridian relied on the fact that farming is a permitted activity on the site and that replacement of tussock with exotic grasses was a natural and desirable consequence of its proposal. However, we consider it likely to very likely that...the land will be worse off, even if the landowners are being paid their licence fees."

The Court examining the Titiokura/Te Pohue summed the challenging nature of making decisions on landscape issues:

"It is self-apparent that landscape issues are matters about which reasonable and informed people may hold conflicting views. It is not possible to say that one view is right and another wrong... we do not agree with the view that the effects on landscape and visual amenity will be no more than minor in respect of either, or cumulatively both, proposals. That is particularly so in considering aspects such as naturalness and, for some, perception. [68]."

However, as was discussed in the Te Waka (revised) case in 2009, the tools for assessing landscapes and probing their value to New Zealanders are as yet not fully formed and some of the issues are distinctly more tangible than other. Visual impacts, for example, are far easier to evaluate than other factors, even though other (non-visual) qualities may be important to people. **The importance given to landscape qualities, just what landscape means, and how landscape qualities should be assessed, appears to be an ongoing debate before the Court.**

### ***Maori cultural issues***

**It is evident that the Court takes seriously the concerns of Maori relating to the sites in which windfarms have been proposed, and recognises the socio-cultural qualities of site/landscape at least in these circumstances.** This is well articulated by the Court in the 2007 Te Waka (original) wind farm decision:

"There seems now to be consensus that landscape comprises more than the purely visual,

---

<sup>35</sup> Project Central Wind Environment Court decision

and encompasses the ways in which individuals and the communities they are part of perceive the natural and physical resources in question. These perceptions can be coloured by... social, economic, aesthetic and cultural conditions. In the case of Te Waka and its surrounds... we are inclined to agree, that when one knows something of the lore and legends, the landscape become more the more significant and memorable."

The strong Maori dimension in the Te Waka case – the Court stated "we have after careful consideration and assessment found the tangata whenua evidence credible and sincere, and hence compelling" – allowed for certain, less tangible elements of landscape to be explored in a framework that was seen as legitimate by the Court:

"In the case of wind farm proposals such as this, a 'good site' for a wind farm technically speaking may well run into difficulty, inasmuch as the prominence and elevation of the chosen site for the erection of turbines may conflict with long-held Maori values attaching to the area in question."

**The Te Waka case stands out as a decision where perceptual landscape qualities (that have been articulated in a number of the wind farm cases considered in the Environment Court) were able to be explicitly discussed, and this is down almost entirely to the Maori framework for articulating community and cultural aspects of landscape.**

These non-tangible dimensions could then be weighed against the climate change implications for the Te Waka development:

"Important as the issues of climate change and the use of renewable sources of energy unquestionably are, they cannot dominate all other values. The adverse effects of the proposal on what is undoubtedly an outstanding landscape, and its adverse effects on the relationship of Maori with this land and the values it has for them, clearly bring us to the conclusion that the tipping point in favour of other values has been reached. When those adverse effects are considered as cumulative... the conclusion is more profound."

### ***Balancing costs and benefits***

The Environment Court decisions necessarily balance local costs and benefits against those at a wider scale.

Where people are directly adversely affected, e.g. by noise or traffic, the Court usually imposes conditions of consent or reduces the scale of a proposal (e.g. removing turbines). **Social and cultural considerations, particularly relating to local people, are clearly another important consideration in the Court's 'balancing exercise'.** As the Court stated in its decision on the West Wind wind farm in 2007:

"Rural amenity landscapes are an important resource for social, economic, and cultural well being, just as wind power is increasingly recognised as a natural resource for the furtherance of social, cultural and economic well being. Careful weighing of all aspects of this proposal has meant that some additional emphasis must be put on the residents concerned."

**The Court has suggested that generation delivers benefits to those in the region – for example, in the decision on the first of the Te Waka wind farm proposals, the Court stated:**

"Achieving a balance between regional electricity consumption and regional generation from renewable resources is a worthy target and one that eases some pressures on the

transmission system and the losses that are incurred. It also internalises the environmental effects - the region suffers the effects but gains the benefits."

**However, these regional benefits are not necessarily tangible for those directly affected, and for the Titiokura/Te Pohue wind farms, the Court noted that 'there is a price to be paid' by local communities:**

"...The capacity to produce a reliable, and relatively affordable supply of electricity is vital to enable people and communities to provide for their social and economic wellbeing, and for their health and safety. Producing electricity will, even if in a small way considered globally, help slow the rate of climate change and thus contribute to sustaining the potential of the planet's resources to meet the needs of future generations... There is a price to be paid for that. That said, we should be understood as indicating that electricity generation from renewable sources will always be favoured in the balancing exercise. We make this decision on a site-specific basis."

**In the recent Project Hayes case, where opponents to the consenting of the project were not just local people, and where the project was of a scale that could be seen as significant in terms of tackling climate change objectives, a far more nuanced picture of costs and benefits emerged:**

"On balance we conclude that there is a net benefit arising from the Lammermoor wind farm. However, we consider that the unmeasured costs are significant and the size of the net benefit is not nearly as substantial as the numbers above might indicate."

The Court cases generally discuss this tension between the national interest and local effects. In the Titiokura/Te Pohue decision, this was summed up in a description of EECA's position as an s274 party:

"EECA takes an unabashed big picture view of the renewable energy situation and is concerned that local and site specific considerations might dominate the debate, at the expense of local and national benefits accruing from proposals such as these."

### ***Promoting national policy***

On most major renewable electricity projects, government agencies are s274 parties, giving evidence on the 'big picture' of energy and climate change. A supportive 'all of Government' submission was for example made in support of Project Hayes, stating that the project would make a contribution to Government's energy and climate change policy objectives.

The Court is clearly incorporating the national policy push for REG into its decision-making, which is of course reflected in the s7 RMA provisions. It comes up in discussion at every hearing of renewable energy projects and has, in some cases (e.g. Awhitu, Project Central Wind, Titiokura Saddle) been one of the deciding factors in the success of a project. For example, in the 2006 Titiokura/Te Pohue decision, the Court noted:

"The generation of a substantial output of electricity from a perpetually renewable source which emits no pollution... is of such national importance and benefit that it clearly outweighs such site-specific adverse effects as there will be."

### ***Lay evidence – information sources and the Court***

**In most cases where social issues are to the fore, those appealing it are individuals or community groups whose expertise is locally-based. Usually such groups have little experience of the Environment Court system and are not well funded, so have less ability to hire in expert evidence.**

These issues seem to have come to a head with Project Central Wind where the applicant Meridian levelled criticism at the evidence presented by the appellants, saying it amounted to "little more than expressions of opinion by lay people looking to support their personal opposition to the project." The Court's response was that:

"...the evidence of lay witnesses identifying those aspects of the environment which are appreciated by them, the reasons for that appreciation, and expressing views as to how their appreciation might be reduced by a particular proposal, are legitimate subjects of lay evidence. We have due regard to such evidence."

However, the Court added:

"That consideration does not extend to information sourced from the internet which went into areas such as technical noise issues and health effects."

In section 3.4.14 we discuss the views of groups we interviewed for this project on their experience of being witnesses before the Environment Court.

To conclude this section, we would emphasise that we had neither the time nor the legal analysis skills to comprehensively review the evolving case law on renewable energy appeals, and we believe that this is an area that would benefit from further research.

### 3.4 Renewable energy generation - stakeholder perceptions

To gain some insights into how stakeholders perceive the social acceptability of renewable energy generation, we had aimed to carry out three case studies – of a wind farm project, a geothermal project and a hydro project. The particular case studies were determined in consultation with EECA staff, with the wind farm project being an example of a relatively contentious proposal, the hydro project somewhat contentious, and the geothermal project being seen as an example of a non-contentious one.

However, difficulties arose with gaining access to stakeholders for the hydro project, in part because it was under appeal and an anticipated decision had not been released. Given the short timeframe of this study it was not possible to set up an alternative project.

As a result we chose to carry out some interviews that were not part of the original case studies, to gain a wider picture of perspectives on social acceptance, including representatives of the NZ Geothermal Association and NZ Wind Energy Association. There was no equivalent association for hydro.

Accordingly, this section is based on interviews carried out with the following (reference codes in brackets):

#### Kawerau Geothermal project

- Mighty River Power representative (MRP)
- Environment Bay of Plenty staff members (EBOP)
- Putauaki Trust representative (PT)

#### Project Central Wind

- Rangitikei Guardians representatives (community based opposition group) (RG)
- Horizons Regional Council staff member (HRC)
- Meridian Energy representative (ME)

CEO of NZ Geothermal Association (NZGA)

CEO of NZ Wind Energy Association (NZWEA)

Member of the former Upland Protection Society (opposition group to Project Hayes) (UPS)

Auckland University geothermal expert working with Maori who have interests in geothermal resources (AU)

#### Brief history of Kawerau Geothermal project:

Mighty River Power lodged a resource consent application to build a 100MW geothermal power station at Kawerau in the Eastern Bay of Plenty in August 2005. The development of the proposal involved securing access to geothermal resources via business arrangements with the Crown, Ngati Tuwharetoa (Bay of Plenty) Settlement Trust, Putauaki Trust and Norske Skog. The proposal was publicly notified and approximately 15 submissions were received. Following the granting of consents, the proposal was appealed by other industries located over the field, but was settled prior to hearing. The power station was built on industrial land owned by the region's largest electricity user, Norske Skog Tasman and was commissioned in August 2008 following two years of construction.

### Brief history of Project Central Wind

The proposal for the 130MW wind farm Project Central Wind in the Manawatu-Wanganui region was lodged by Meridian Energy in June 2008. The project was notified the next month and 69 submissions were received, 43 in support and 26 in opposition. In February 2009, resource consents were granted but a local group which had formed in opposition to the project appealed the decision to the Environment Court on a number of grounds including visual effects of the turbines on the landscape, impacts on amenity values, proximity to residential dwellings and movement of the blades. The MfE opposed the appeal as a s274 party, stating that PCW made a contribution to the Government's energy and climate change policy objectives. In January 2010, the Environment Court upheld the original decision and consents were granted. The project took a total of 19 months from the date it was lodged to final consent.

Due to funding and time constraints, and the nature of this research as a scoping exercise, the number of stakeholder interviews was necessarily limited, and can do no more than indicate some of the socially determined themes. To provide a richer picture of social perspectives, we have also used quotes taken from the media (newspapers, magazines, the internet) to further illustrate or exemplify the themes that have emerged. These quotes are placed in boxes to differentiate them from the interview quotes.

Should further research be carried out on this topic we would recommend a wider and more comprehensive set of interviews across REG types and stakeholders.

The following sections discuss the main issues that arose in the interviews that appear to have some bearing on social acceptance of REG.

#### **3.4.1 Siting**

**Siting is clearly a crucial issue in the acceptance or otherwise of a proposal by the public, but the energy industry's rationale for selecting a site will not necessarily coincide with how it is perceived by the public.** Some sites are relatively unproblematic for development in the public eye, and examples given by our interviewees include Project White Hill windfarm in Southland (perceived as a 'working environment' by NZWEA) and Kawerau geothermal project (perceived as an 'industrial area' by MRP).

Other sites have values or qualities that may be seen by some stakeholders as inconsistent with use for renewable energy generation. These include landscape values, cultural values, ecological values, recreational values, historic values and amenity values. These values are rarely singular, and can be strongly interrelated. For the Kawerau geothermal project, for example, landscape and cultural concerns were linked with the Putauaki Trust having "cultural concerns about views of the mountain – they didn't want to disrupt the mana of the mountain." (EBOP)

The Te Waka wind farm proposal is a good example of inappropriate siting because of cultural and spiritual issues:

An application to build a wind farm [Te Waka] near Napier has been declined for the second time by the Environment Court because the site is spiritually significant to Maori... In his decision, Judge Bollard said the submissions by tangata whenua were credible and sincere. Consent conditions suggested by the lines company would not recognise their concerns, or take into account the principles of the Treaty of Waitangi... "We are driven to conclude in the end that the Maori dimension is such that Unison's application, however merited in technical terms, must yield to the force of the case presented for the tangata whenua interests," the judge said.

Maungaharuru-Tangitu spokeswoman Tania Hopmans was pleased with the judge's strong comments on the site's value to Maori. "If you frequent Hawke's Bay marae or if you have Maori friends here, you will know the huge importance of this maunga [mountain] to the people here. I think Unison could have understood this some time ago," she said.

"Maori issues cited as wind farm declined" Dominion Post 3 March 2009  
<http://www.stuff.co.nz/dominion-post/news/hawkes-bay/1756863>

Those who oppose REG proposals frequently voice their opposition in terms of the inappropriateness of the site rather than opposition to the technology itself. This example is from the Makara Guardians website speaking of Project West Wind:

From the moment you come over the hill your senses will be assaulted by the sight of seventy spinning turbines each 125 metres high (three times the height of the Brooklyn turbine) silhouetted against the skyline.... The whole beach area will be subject to noise pollution up to 24 hours a day, day in and day out... No one would deny that sustainable alternative forms of energy generation are our only real hope for the long term future of the planet. We do not oppose the sensible development of wind turbine power generation. What we are opposed to is siting these industrial complexes close to people's properties in an environment that is used recreationally by thousands of people. *Makara Guardians website*  
<http://www.makaraguardians.orconhosting.net.nz/MakaraLandscape.htm>

Another interviewee spoke of the "total, radical unsuitability of the landscape" of the Project Hayes site:

"There is a whole suite of reasons [why the site is inappropriate]. First and foremost, what a lot people find objectionable, the prospect of large-scale, industrial structures being erected... in landscapes, in soils, which are mainly vulnerable and improper as the site for a wind farm." (UPS)

One of the oppositional groups interviewed felt that there should be "an absolute prohibition of energy projects in special places in New Zealand" and referred to these as including national parks, areas of high natural beauty, or ecological or cultural significance, and also proximity to national parks. (RG)

**Location appears to be a key influence on social response – if a site has valued qualities which have a poor fit with a REG development, then opposition is likely. This suggests**

**that site assessment (for socially valued qualities) is a very important step in site selection.** The Meridian Energy representative said that their main reason for choosing a wind farm site is the wind resource, the topography and nearby availability of transmission lines. They also look for landowners who are fine with windfarms on their land, “and then probably we look at a number of other factors in terms of the environment” (ME). **But given the strength of feeling generated by perceived wrong siting of developments, it is surprising that more emphasis is not placed on determining the socially and culturally derived qualities of alternate sites as a fundamental part of site selection.**

### ***3.4.2 The effect of proximity on opposition***

Proximity to urban areas is a contested issue for wind farms in particular. In some instances, such as the Makara Guardians quote above, proximity to residential areas is seen as problematic, and this is related to recreational and noise issues in particular. On the other hand, an oppositional local group for one of our case studies stated:

“If large conurbations want/need more power let them have the power generation happen in their own environments. It is interesting that most of the submissions in support came from residents of Mt Victoria and Haitaitai in Wellington! One imagines they would have not been so happy if the 52 turbines had been placed above them on the town belt.” (RG)

The group felt that local opposition displayed a distinct lack of NIMBYism. They felt it was the submissions from afar in support which displayed a particularly NIMBY approach – put them in someone else’s back yard. (RG)

The effect of proximity on opinion appears to be highly varied. Certainly there does not seem to be a predictable relationship between local vs more distant support or opposition. For the example above, the same oppositional group noted:

“There was a converse [inverse?] relationship in support or opposition between local and distant submitters: Of local submissions, 15% supported and 85% opposed. In all cases, most of those opposing sent in substantive submissions while those who supported sent very scant details of why they did so – many just on the small space on the form provided. “I support the use of renewable energy”, was one typical response. Another was that the project would be sited “not in the face of urban NZ.” (RG)

In contrast, for our interviewee from the Project Hayes and Mahinerangi opposition group: “... as it happens, with those wind farms, I live hours and hours away from them. [Yet] I think it's the most pathetic aspersion cast upon people NIMBY therefore you've got no world view, therefore you're a parochial, small-sighted individual. Indeed the truth of the matter, is that people frequently live in the places where they live because they hold it as a worthy place to live... and have a strongly international perspective.” (UPS)

Interestingly, despite ‘NIMBY’ being usually used as a pejorative term for opponents of developments, both opposition group interviewees reclaimed the word:

“There's nothing wrong with being a NIMBY, in fact I'd encourage people to be NIMBYs” (UPS)

“We've embraced NIMBY [as a positive term], we're guardians of the land we live in.” (RG)



**Of the two opposition groups, one was proximate and the other quite dispersed from the proposed wind farm site. As will be discussed in section 4, this bears out international findings that show a highly variable relationship between support (or opposition) and proximity.**

### **3.4.3 Scale**

The scale of the plant or development affects how projects are perceived. This is evident in oppositional group websites and interviews, where the large scale of projects (site coverage, number of turbines, height of turbines, height of dams, etc) are strongly emphasized, as in the following examples:

“This project will involve the disturbance of 820,000 square metres (0.82sq kms) over the 47 sq kilometer site. The amount of earth removed will be 765,000 cubic metres of generally wet ground as acknowledged in the consent application” (RG)

You can say, Project Hayes takes place on 92 square hectares... [but] it's absolute nonsense, it's like the whole landscape is infected by large-scale, intricate industrial dissection of topologies for the most effective erection of these huge turbines and all the infrastructure they have to have.... If 176 turbines were stuck outside Dunedin or in Southland, wherever it is, I still think it's totally and utterly wrong to shove that many turbines in a single area. Visually it's highly intensive and psychologically it's highly intensive." (UPS)

“The Waitaki river is one of the few broad braided rivers in the world and the largest in the South Island. If it proceeds, Project Aqua will take over 70% of the water from the river and divert it through a 60 kilometre canal running down the south side of the river.” Green Party website <http://www.greens.org.nz/misc-documents/event-impact-project-aqua-waitaki-river-waitaki-first-inc>

Discussing whether scale is a key driver of opposition, the NZWEA felt that while the 630MW Project Hayes was always going to make people talk, “scale is not everything, there's no magic bullet”. They mentioned two examples of small wind projects that had been appealed, such as the 3-turbine Horseshoe Bend (but noting this related to non-social issues) and Long Gully (which was near a wildlife sanctuary) NZWEA.

There is clearly support for smaller scale REG:

"I'm not a NIMBY, I'm pro wind generation behind my own house... by all means develop wind generation in the country, do it in smaller plants... have wind installations of maximum 25-30 turbines and prepare for larger plants as technology [improves and storage becomes a reality]... but at this stage to go destroy the Lammermoor for that sort of incremental... increase in your energy generation is just crazy. It's madness." (UPS)

**The public appear to respond negatively to larger scale developments, and more positively to smaller scale developments - a finding which is common in wind literature internationally.**

#### **3.4.4 Impacts on the environment**

Consideration of environmental impacts is the core issue in any resource consent process and decision. Some impacts are specific to the type of REG itself (e.g. damming rivers, erecting turbines, drilling wells for geothermal) some impacts arise from the interaction of the REG development or operation and the specific physical characteristics of the site (e.g. soil erosion, changes in temperature of nearby hot pools) and some impacts are generated from the interaction of the REG with how people perceive and interact with the site (e.g. cultural values, recreational activities).

**These issues are well canvassed in every AEE, so we do not feel it is necessary to detail environmental impacts here, except to note that they are a key influence on social acceptance, and that they vary widely.**

#### **3.4.5 Cumulative issues**

The NZWEA suggested that the only real example of cumulative effects with wind farms is the Tararua range in the Manawatu, with some cumulative issues at Te Rere Hau and Turitea.

The council interviewee had a similar perspective:

"[It's] reflected in Turitea, the general flavour is 'we've had enough in Palmerston North' and my personal feeling is we've reached saturation point." (HRC)

The various projects in the area have also given rise to concerns around cohesiveness of wind farm design:

"In Palmerston North, we have five different developers with many different types of turbine... [so there's] no overall cohesiveness... A broad initial perspective would have helped." (HRC)

**Cumulative effects are topical in the Manawatu area, but it is likely to be only a matter of time before cumulative effects start to become an issue in other resource-rich areas such as Hawke's Bay and Otago/Southland (wind), geothermal (Waikato, Bay of Plenty) and hydro (Westland). The Turitea Board of Inquiry decision is likely to provide a lead in just how much is enough when it comes to wind farms.**

#### **3.4.6 Belief in the technology and information**

It is evident that there are varying positions on whether specific REG technologies are the answer to NZ's energy needs. For example:

The Government's position is that wind is needed to ensure continuity of supply, and to meet our Kyoto Protocol commitments. Neither of these goals are met by wind - quite the opposite is achieved in fact. By its very nature (fickle), wind is the most unreliable and least effective form of generation. (RG)

"Apparently over 4X the required amount of generation capacity is being proposed [in

government targets], 4X more than proposed demand." (RG)

"I agree with Meridian, the leading energy developer, that wind can indeed diversify supply. I don't believe that an intermittent source is necessarily going to provide the necessary capacity that is crucially needed, and I identify that as the fundamental issue that New Zealand needs to face in terms of its energy security." (UPS)

Opponents believe that misinformation is promulgated by the wind industry:

"Some of us actually thought that wind energy was a good thing until we realised the huge impact these would have on us personally and in general the degree of misinformation that surrounds wind energy as a renewable resource." (RG)

But the wind industry feels that opponents are ill-informed, and promulgate misinformation:

"Some people just have an opinion [disliking windfarms] and don't necessarily know a lot about it" (ME)

"Groups that are in opposition are often in contact with one another, sharing information. You'll see something pop up in one hearing, and then be referenced somewhere else, by another group, so there's some sort of ... internet groups where those people are sharing information, and there's just that much more of it around. If you want information about health effects or other issues, you'll find all sorts of reports you can bring in... In Central Wind in the Environment Court, there was some comment like 'what is this, trial by Google?' I think letting lay people present stuff that is supposed expert evidence from the internet ... it can't be questioned in the appropriate methods. Some of it might be valid, [but] some of it when you read it doesn't quite strike you as that." (NZWEA).

The public also do not necessarily believe developers assurances, particularly where issues of great importance to them are at stake:

The [environment] court appears satisfied the \$600 million plan to put 200 huge turbines generating about 200MW on the seabed at the harbour mouth would cause only minor problems. But local boaties think differently. Des Subritzky of Dargaville - awarded a Queen's Service Medal in the New Year honours list for his lifetime involvement with the harbour - said yesterday the anchors of boaties fishing the Graveyard at the harbour entrance would drag across the turbines... But what most concerned Mr Subritzky was the possibility of the power generation plan ruining the Kaipara spawning grounds, which provide 98 per cent of snapper in the North Island west coast fishery. "How will they put it right if they ruin the snapper fishing?" he asked. *Anger mounts as Kaipara tidal power plan gets nod.* Northern Advocate 12th January 2010

Developer assurances about effects, if later proved wrong, can have wide ramifications:

"It doesn't take much to destroy a relationship. At West Wind, people had been told they wouldn't hear the wind turbines [but they did]." (NZWEA)

This issue of perceived risk, and lack of faith in developer assurances, was also raised by Putauaki Trust:

"The environment is not benefitting from any kind of energy generation project."..."Given that the power companies have got the resource to invest in improving the processes [for power generation development], it's an obligation on the part of the power company to do that." (PT)

**The lack of belief in REG is evident at two levels – at the project level, where assurances about effects may rightly or wrongly be disbelieved, and at the technology level, where people may question the efficacy of a particular technology. At both of these levels there is always room for debate, but the RMA process only allows for the first question to be aired. Currently, there is no process whereby the public can have a voice in the second question, which may partly account for the sense of frustration evident in the quotes.**

### **3.4.7 Trade-offs**

Establishing a REG plants fundamentally involves tradeoffs: an undeveloped environment vs energy production; economic development vs environmental/social values... These are well illustrated by the following quotes:

"...wind farms are not the perfect solution to global warming that electricity companies would have us believe. As a nation we have to wake up and realise what we are losing in order to gain a few extra kilowatts of power. Our cultural and natural heritage can never be recovered if it is allowed to be so wantonly trashed." *Letter to the editor, NZ Listener June 19 2010.*

"Rivers aren't renewable. They're not making any more of them and the ones we've got – we're not making good choices about. Basically it comes down to greed." *Lawson Davey, Marlborough Fish & Game Officer, Cry me a River, North and South, April 2010.*

"Its all about balance in life and if people want to live in a modern way and come home to watch television and have the lights on and have heat pumps in winter then, yes, there is a price for that and the price may be that we interfere with a river." *Graeme Purches, TrustPower spokesman, Cry Me a River, North and South, April 2010*

As one of the interviewees stated: "Everyone has a favourable view of sustainability but what level of inconvenience are they prepared to accept?" (NZGA)

Speaking about projects that are now consented but may never be built, RG said "there are four times the number [of MW] lodged [over actual] demand. So many communities are being divided and traumatised [for] no long-term goal."

The extent to which New Zealanders are willing to trade the quest for more energy against other socio-environmental qualities is one which is little canvassed at a policy level, and certainly not questioned at RMA hearings. Yet it appears to be at the core of much of the social debate. One aspect is the relationship between energy and economic growth:

"People want energy, [because of the] link between economic growth and energy consumption." (NZGA)

"People in the BoP area don't really care one way or the other, they just want the lights to go on. [They're] interested in adequate energy supply and steady cost. The project is securing jobs and offering economic stability." (EBOP)

"We have come to rely on [electricity] and aim for economic development which means more electricity demand, [and wind energy] is the most benign way of doing this." (NZWEA)

Another aspect is the extent to which the quest for more renewable energy needs to be moderated by social and environmental considerations:

"[Attitudes] in terms of wind are hardening. People have a preference for renewable energy but they're not going to wreck anything they value to have it." (EBOP)

"The third stated objective of the Rangitikei Guardians Inc. in its trust deed is: To educate the wider community about the impact of wind farms, and the need to balance energy generation developments from renewable sources with New Zealand's most valuable resource – its landscape and natural beauty." (RG)

"I think that if power companies, given the nature of their business, and particularly with respect to natural heritage, [need to understand] that [for example] hydro electric power generates from a river. So a company that's advertising campaign, for example, is "thank the river for your dinner tonight" [would be] a company that's starting to get a grasp on what it relies upon and the key contributing factor to its whole industry. (PT)

Makara residents fought the West Wind proposal for two years, highlighting the problem that even if electricity was carbon-free, New Zealanders still did not want its generation to impinge on their lifestyle.

*Turbine farm for Ohariu Valley, Dominion Post 30/01/2008 <http://www.stuff.co.nz/national/244202>*

Very different views also exist on whether renewable energy enhances or despoils New Zealand's 'clean green image'. One energy industry interviewee suggested that geothermal power fits in "absolutely" with NZ's clean, green image – there are no other 100% reliable energy sources. (MRP). The Putauaki Trust had a different perspective:

"Geothermal is a little greener than coal... Everyone would love for geothermal to be the greenest of green generation technologies. The Putauaki Trust wanted to see it this way, but we didn't know all about the risks. We [now] feel that there was a spin put on it." (PT)

Another energy industry representative spoke of wind energy's 'brand' as sustainable, renewable energy (NZWEA). On the other hand, a former member of an opposition group said:

"I can't say unreservedly, universally that I in every case support renewable energy. I do believe RE is a great positive for NZ, but not in the way it's currently being put forward... It's industrial development, there's no two ways about it. Accept that it's industrial development and try and accommodate it. That's my argument." (UPS)

There is a suggestion that energy conservation and efficiency receive less emphasis in government policy, yet could potentially replace the need to continued expansion of generation capacity:

"We believe that energy conservation should be the first priority of the national energy strategy." (RG)

**There appears to be an industry perception that there is a public 'disconnect' in understanding the trade offs (NZWEA) – that is, that the public do not understand that to continue to receive unlimited electricity they need to accept changes to place-qualities.**

The view from the other side is that:

"Meridian has learnt nothing from Project Hayes, they're operating under economies of scale, they don't care about environmental collateral, they characterize it, reduce as something that can be offset." (UPS)

**There are clearly opposing views on the 'green-ness' or sustainability of renewable energy technologies generally – a debate that is not easily accommodated in RMA hearings and thus largely stifled nationally.**

### **3.4.8 Developer-stakeholder relationships**

Consultation with people and groups who may be affected by a proposal is not legally required under the RMA, but is widely recognized as good practice by developers.

"We go out to the public once we know what we're doing. You go out too early and people tell you to come back when you know what you're doing... The consent and project manager look at what community, physical is going on on site and speak to those affected." (ME)

"The general perception is that if you go about things the right way, e.g. trying to engage with the community, you will get consent." (NZWEA)

It would be an unusual developer that did not consult, but our study indicates that the quality of relationships is often raised by opponents as an issue. For Putauaki Trust, who had both a financial interest and also a cultural interest in the development, they felt that their relationship had been mishandled by the developer. Another issue was rapid turnover of staff:

"When we started seeing the familiar faces come and go, and then rapidly all these new face come in, new face come in, replacement and replacement and replacement, that's when we discovered that just like every other time before, there's no longevity to the relationship. The relationships that you form with individuals are not warmly handed over to the new individual. There's just sort of the corporate organizational approach, which is relatively clumsy." (PT)

A similar set of issues arose with the Unison wind farm:

Unison was poor at consultation and appeared to have approached iwi as an afterthought. "We're not opposed to wind farms, we understand the need for renewable energy," she said. "But not on this site. This is our sacred mountain. We are duty-bound to protect it."

"Maori issues cited as wind farm declined" Dominion Post 3 March 2009  
<http://www.stuff.co.nz/dominion-post/news/hawkes-bay/1756863>

In the wind farm case study, the community group was concerned about:

“...the lack of consultation with affected residents prior to the official application. The lack of consultation with some affected residents even after Meridian were advised of the effects on those folk – they didn’t legally have to consult, so where they knew the greatest visual effects would be experienced, they simply didn’t let those people know” (RG)

**It is also evident that there can be quite different perspectives on whether consultation has been adequate or not.** For the wind case study, the developer apparently discussed the concept of a wind farm with the stakeholder group before the proposal was fully developed. The group was concerned that there was no follow-up consultation and reported that the developer subsequently refused to hold public meetings and talk to community as a group (RG). Yet according to the Regional Council interviewee the developer did “extensive consultation with all key landowners prior to application” and they considered that all parties were well-informed about the process and the project.

For the geothermal case study there seem to be different views on the success of the consultation. The regional council felt:

"There was genuine openness right from the start [and through the process they] became more satisfied and wanted it to work." (EBOP)

Consultation is not always in the public eye, and successful consultation processes are often the result of the establishment of good relationships over time. For the geothermal case study, much of the consultation that took place pre-dated the lodging of the application, so wasn't ‘visible’ to the regional council:

"If you're smart and well organized, then you'll do a lot of pre-work"... "If you put in a lot of effort up front then the rest of it's going to be smooth, if you put in little effort up front, then the rest of it is going to cost you a lot." This interviewee felt "the number of submissions relates quite strongly to how much effort the applicant puts in at the front end" (EBOP)

The NZ Geothermal Association representative considered that projects have the smoothest path when the consultation process is led by local Māori groups with financial interests in a geothermal resource.

The two community groups we interviewed had initially gone into the consultation phase with relatively positive feelings towards the developer, but these had soured over time:

[Initially] “We believed Meridian Energy... They are very nice people. Suave and slick. Not always honest, but were approachable.” (RG)

When asked what kind of relationships they later had with the developer, the response was:

“Appalling. They wrote us off as just a few shepherds and farmers. They have lied, bribed and used the weight of their status as an SOE, and their unlimited financial resources to beat us into submission.” (RG)

For the Putauaki Trust, initially they felt ‘very much valued as a partner with MRP’ but later ‘lost all trust because of their handling of us’. In hindsight ‘we were courted by them... perhaps we ought not to have been so nice, we were so easy to deal with’. Once the business deal was done, they felt cultural issues were ignored and the Trust sidelined. (PT)

**Poor communication and engagement, whatever the cause, can create strong us-and-them positions between the developer and stakeholders, and strengthen feelings of opposition:**

It may be enough, if people feel slighted by a developer, to say, maybe I could have accepted it but I don't think you've been listening to me, so I need to say as much in a hearing process." (NZWEA)

The industry response to having had the Te Waka wind proposal declined for a second time by the Environment Court because of the significance of the site to Māori, was to suggest that the public's right to object should be legally limited:

Unison chief executive Ken Sutherland said the [Te Waka] decision sent a "seriously disconcerting signal" to companies trying to undertake environmentally friendly energy production. "On this basis, there will need to be legislative change adopted for such schemes to succeed."

*"Maori issues cited as wind farm declined" Dominion Post 3 March 2009*  
<http://www.stuff.co.nz/dominion-post/news/hawkes-bay/1756863>

**Good consultation practice is generally accepted as necessary within the New Zealand planning and project management fraternity, and there are excellent sources of information and training in this field (e.g. [www.qualityplanning.org.nz](http://www.qualityplanning.org.nz)). However it appears that it does not always play out in the field as well as it might, and across REG developers generally there appears to be room for improvement.**

### **3.4.9 Perceptions of monetary arrangements**

It is usual practice for developers to offer financial compensation to some people, where they are affected by the proposal:

"We don't just chuck a whole load of money at things to make people go away, we can't do that as we've got to justify what we're doing .... Its about effect and response, not just squeaky wheels" (ME)

Such compensation packages sometimes occur at pre-hearing stage but also at appeal stage, and appeals are at times withdrawn after financial settlements have been agreed.

Our interviews suggest that there is a range of views on the practice of using financial means to negotiate with objectors or potential objectors, and that it can be perceived in a negative light as 'buying off':

"Before being appeased and bought off by Meridian Energy, DOC, Iwi and the military were opposed to the site..." "Buying off government key stakeholders – I don't think effectively bribing is acceptable... Everyone has their price it seems, and this practice should not be allowed. Particularly when the companies refuse to compensate affected land owners." (RG)

This particular quote shows the complexity of the issue with the interviewee both deploring the practice but at the same time suggesting that the practice should be more widely extended through the community if it is brought into play.

In relation to the geothermal case study, we were told:



"[The developer] has deep pockets and could create favourable circumstances for many of the people they were involved with... perfectly legitimate, but they are an organization that has deeper pockets than many." (EBOP)

**Financial arrangements are typically confidential. A societal issue here flowing from the confidentiality of these arrangements is the potential 'burying' of issues that collectively could be significant if they were all brought to the surface. This potentially weakens the positions of others with related concerns and reduces the ability of hearing panels to consider the full societal (or other) implications of a proposal. The process also tends to reduce concerns to simply a dollar figure, enabling those who can negotiate well to financially benefit, and those who cannot (and who are not happy with a proposal) to expending their time and money on opposition. The lack of transparency in terms of who has been given money and how much can also build a sense of distrust and a feeling among some stakeholders of 'cloak and dagger' operations being carried out to ensure a project's success. Essentially it can set up a loaded playing field which can exacerbate a sense of 'us' and 'them' amongst community members.**

#### **3.4.10      *Flow of benefits***

**There is a perceived correlation between the recipients of direct benefits from a proposal, and support for that proposal. While this is hardly surprising, it also sets up a division within communities of 'haves' and 'have-nots'.**

When asked who benefits from a proposal, the response from an opposition group was:

"The local landowners, all of whom are absentee farmers, who get \$15,000 per turbine; the councils who charge rates on these landowners; the SOE, and the government which collects the dividends from them. Cynically we note that between 2 and 4 permanent jobs will be created following construction. There will be some commercial gains to local businesses during construction, but as the main access is through Waiouru, it is likely that Taihape businesses may be overestimating the possible benefits to them." (RG)

They also commented:

"Much of the [local] support was from those with a beneficial interest in the project going ahead, including the landowners, the government and its agencies/SOEs, the wind energy association, and the lead construction company." (RG)

The NZWEA interviewee hoped that the new National Policy statement on Renewable Electricity Generation would "present benefits to people so they become more tangible". He noted "jobs and benefits are not necessarily [going to go] direct to communities and councils. There is another narrative and larger context." (NZWEA)

**Whether benefits are direct or indirect, there are clearly different perspectives on who benefits, and whether local people (who are directly impacted) do or should receive some benefits from REG. It would be interesting to explore how energy developers are using compensation packages, as there appear to be very different community perceptions**

**between the act of ‘buying’ compliance and the act of providing ongoing benefits to a community or individuals. Certainly, overseas evidence suggests that enabling communities to own, have shares in, or benefit on other direct ways from turbines in their vicinity does enhance acceptance (discussed further in section 4).**

### **3.4.11 Co-investment**

While almost all of the REG industry players are energy companies or SOEs, there is an increasing involvement by Māori tribes and trusts in geothermal energy:

“From a Maori perspective, renewable energy fits very well with kaitiakitanga.....The future of geothermal in New Zealand will be involving Maori. Pretty much all of the remaining high value resource is owned or managed by Maori groups. For development to go ahead it will involve these people as decision-makers”. (AU)

Although many of the developments to date have been with Maori as joint venture partners with energy companies, there is increasing interest in Maori groups leading these developments. For example:

“New Zealand today moved a step closer to exploiting the huge untapped potential of its geothermal resources when energy firm Mighty River announced it has been given the go-ahead to construct a NZ\$400m (£194m) geothermal power station near Taupo in the centre of the North Island of the country. Groundwork on the project – a joint venture with the Tauhara North No.2 Trust – is expected to start before the end of the year, with the 110MW power station scheduled to become operational by winter 2013. The same joint venture has also developed the nearby 140MW Nga Awa Purua Geothermal Power Station, which will be officially opened this weekend. Mighty River also operates a much smaller 34MW station at Rotokawa.

Aroha Campbell, chief executive of the Tauhara North No.2 Trust, which represents the land rights of indigenous people, said the Trust was delighted to be involved with another geothermal power station project. "In the long term, the success of these projects will have significant economic benefits for the Trust's shareholders and future generations," said Campbell.

<http://www.businessgreen.com/business-green/news/2262962/zealand-taps-geothermal>

Maori are looking to create a \$2 billion geothermal power generation company off the back of this week's \$500 million Central North Island Treelords settlement. Consultants employed to investigate business opportunities by the eight iwi involved in the deal say Maori could be responsible for generating 10 to 20 per cent of New Zealand's electricity within five to 10 years. The consultants, led by former Treasury adviser Pelenato Sakalia, based assessments on untapped geothermal resources beneath the 170,000 hectares of forest land around Lake Taupo and in Bay of Plenty which is part of the deal.

*Treelords deal leads to power plant plan* [www.stuff.co.nz](http://www.stuff.co.nz) 29/06/2009

Such investments put these groups in the position of ‘insiders’ and may significantly change the nature of the relationship with REG proposals. However, having a financial stake does not necessarily mean being able to influence the development, nor get around other relationship issues. The Putauaki Trust for example set out environmental bottom lines for

the development of the geothermal resource, but felt that these were largely ignored, and that they were not consulted on a further application for varying the consents, so that:

"... long standing relationships between tribes are affected by business decisions [of the] SOEs. There is care – mishandling causes issues for the company – but interest in non-existent. It's just another bunch of Maoris grizzling." (PT)

Maori governance issues have also come to the fore in the Kaipara tidal power proposal:

Te Runanga o Ngati Whatua Chairman, Naida Glavish, says the Iwi fully supports calls by Te Uri O Hau and the Maori Party to establish a moratorium on development in the Kaipara Harbour. She says in order for revisions to the foreshore and seabed legislation to have any meaning whatsoever developments, such as those being mooted by Crest Energy to generate power from turbines across the Harbour entrance, must wait. "We are at a delicate stage of negotiating Iwi rights to the foreshore and seabed and this must take precedent over any development proposals in the pipeline." Naida Glavish says the Kaipara Harbour is not only a taonga at the very heart of the rohe (territory) of Ngati Whatua, it is also a critical ecosystem that underpins the snapper (tamure) fishery for a huge area around the west and east coasts of the North Island.

*"Ngati Whatua backs call for moratorium" Scoop, 16 April 2010*  
<http://www.scoop.co.nz/stories/PO1004/S00155.htm>

For marine energy more generally, it is possible that foreshore and seabed claims may have a bearing on the acceptability or otherwise of projects unless co-governance or joint venture agreements are put in place with the relevant iwi.

**Overall, co-governance and joint venture arrangements already exist and seem likely to increase in geothermal developments in particular. This may partly account for the greater degree of acceptance of geothermal energy compared to other REG types. It would be useful to study a selection of such developments (in both geothermal and other energy types if they exist) to see whether such arrangements do lead to greater acceptance.**

### **3.4.12 Legacies**

**The history of interactions between energy companies and a community seems to have a bearing on how new proposals are perceived.**

In the Kawarau example, we were told that the area had large-scale industrial history, the Tasman Mill legacy, and welcomed new investment. The key site had consent for industrial use and an accepting community. Over time people have become more accepting of renewable energy projects - a "conditioning process [of local people which] happened over a long time." (MRP)

In contrast, with Project Central Wind, we were told there were "a bunch of people disaffected by the way the NZ Electricity Department liaised with them on a previous hydro project, [so you have] the legacy of a 'didn't-take-care-of-us power company.'" (NZWEA) The same interviewee said "It doesn't take much to destroy a relationship e.g. at West Wind,

[people] had been told they wouldn't hear the wind farms [but they did]... one bad wind farm can ruin this [wind energy's "brand" as sustainable, renewable energy]." (NZWEA)

A bad legacy does not even have to be in the same industry. The Putauaki Trust had a "history of grievance, suspicion founded on good reason" as a result of the Tasman Paper Mill at Kawerau site causing environmental degradation (EBOP).

**The power of past legacies should not be overlooked, nor the impact of current actions on future legacies, as the effects can clearly be long-lasting.**

### **3.4.13 Role of the media**

There was some comment on the role of the media, and it seemed to cut both ways. The NZ Wind Energy Association interviewee felt that "People raising complaint is an easy story for the media" and referred to a negative media story which dominated the Project West Wind opening (NZWEA). When asked if opposition to wind farms was increasing, they suggested that perhaps this was a perception as wind farm stories had managed to capture national media attention (NZWEA).

On the other hand, a community organisation felt the media worked against opposing groups:

"There is repeated media repetition of myths and lies. There should be a more independent approach to planning, [with] real hand evidence, not just repeated myths and legends." (RG)

The same interviewee was also annoyed at one energy company's use of the media:

"Where Meridian Energy have been especially clever... is with under 30 year-olds. Young people have been sold on the hype [of renewable energy]. Meridian has Jeremy [Wells – Eating Media Lunch] fronting for [them]. It's a bare faced partial telling of the story." (RG)

**As a whole, the perception was that the media promulgated both positive and negative aspects of renewable energy – its main interest being a 'story' – and that this could be seen as good or bad depending on your perspective. It would however be useful to undertake a comprehensive review of media stories to see how renewable energy is portrayed more generally.**

### **3.4.14 Fairness and equity**

**There was a strong feeling from opposing groups that while they were attempting to represent some aspect of the public interest, they were in a strongly inequitable position compared to the developer and supporting groups.** This was particularly seen in gaining access to information and presenting at hearings.

"It's so unequally weighted, it's just impossible except for people who have enormous drive and enormous resources. We were very lucky in Otago that we had a number of well-known environmentalists and socially powerful people who came to the party, like Anton Oliver and Graham Sidney, but that doesn't happen in every case and even though we may be well be

smashed down in the future it seems that the Save Central victory is being regarded across the country as a great inspiration victory for all the downtrodden environmental groups and NGOs with equally valid fights everywhere that are not going to win because they don't have... all those individuals."(UPS)

"We had to inform ourselves, to the extent that A, B and C in particular provided research information to both our landscape planner and our law team. It was clear the councils' commissioners knew very little about the real impacts of wind generation on communities." (RG)

"I am also highly aware of the fact that, as with other forms of large-scale, development activity, the applicants bring a hell of a lot to bear at the Environment Court... and people's valid concerns are drowned out because they don't understand things like you have to bring evidence to bear in court, you know really rudimentary sorts of things." (UPS)

The personal and financial cost of opposing was a major issue:

Because Rangitikei Guardians operates in a very small community, our access to funding our appeal was severely limited. Despite the \$35,000 we received in environmental legal aid, we are still in debt. This also meant we had to limit our grounds for appeal to that recommended by our lawyer, viz landscape issues. (RG)

"What I really, really resent, what I'm really bitter about having given up half a decade of my life to fighting those three wind farms... is that no one's been listening to anyone in New Zealand. None of the energy companies listen, the Ministry of Environment couldn't care less, the one person who was a great champion for the little person was Dr J. Morgan Williams, the 2006 Parliamentary Commissioner for the Environment, he wrote his absolutely right on the ball report 'Wind power, people and place,' which was subsequently dished by all the major players" (UPS)

There was a perception that the level playing field is skewed by the financial difference between developer and community members:

"It's absolutely not a level playing field. [It's] what you can afford, one solicitor and one expert, as opposed to three for the Government, three for Meridian and three for the Council." (RG)

The playing field is also seen to be tilted through the legislation, both by the government's interest in the energy SOEs, and in the way the law is interpreted:

"The Environment Court is not judicially independent, [it's] skewed in favour of the Government and the SOEs.... "For Contact [Energy], a non-SOE, it's a different ball game... There is a much tougher bar." (RG)

"In terms of the legislative framework, for example, the attitude that the power companies have is that they've got it locked down and it all very much works in their favour is inaccurate. I think they should be very, very familiar with the interface between the RMA and the Electricity Generation Act... and that while there might be some sort of hierarchical interface between those, the Part II matters of the RMA are meaningful. They are matters of national importance and it's time now for the power companies to be considerate of each and every one of the aspects within Part II, including historic heritage." (PT)

When asked if they felt if they could fully express and gain appropriate recognition for their position, a community group interviewee responded:

“Absolutely not in any way. E.g. I have a qualification in applied social research, but my evidence was not accepted as ‘expert’, and was therefore disregarded by the court. We were told by the judge that internet sourced research, even from reputable university sources would not be accepted but it appeared repeatedly in the [developer’s] evidence, both written but also as presented in court verbally. “(RG)

They went on to say “we were ridiculed for finding information on the internet, but it was from recognised bodies, for example the WHO and universities.”

**The interviews with community/iwi groups give a strong sense of a lack of a level playing-field when it comes to REG developments, particularly with the advent of all-of-government submissions in support of renewable energy developments, and the belief that energy developers and particularly SOEs are favoured in legal processes. While it is clearly important that government agencies bring national policy to the Court’s attention, siting and other societal issues are left entirely to the public to argue through the Court. The relative financial clout and uneven ability to bring ‘experts’ to the table is also of concern to these groups. Both may exacerbate a feeling of ‘us and them’ between these REG promoters public interest groups.**

### ***3.4.15 Expressions of support v opposition***

**There is a perception that there is a widespread support for renewable energy (particularly wind) but that these people are not expressing it formally in submissions:**

“We don’t see it as a lack of public acceptance. We probably do have the majority, most New Zealanders will accept renewable energy ... The opponents you get on a project is more often a minority – local populations. The people who support these things don’t generally come out applauding. Hayes is a classic example. Central Wind as well, we got a lot of what we call the silent majority. (ME)

The NZWEA was also concerned that supporters of wind energy projects were not making submissions. They felt that people who are set to benefit from wind farm developments such as via jobs, "don't have a voice" (NZWEA).

"People [supporters] in general are not necessarily coming forward in formal processes e.g. RMA hearings... It's about risk and reward. People are not going to make it a priority as they think others will speak. Opposers are [always] going to be more motivated to take action." (NZWEA)

In contrast, they felt that opposers can see

"...tangible, immediate effects, but [reasons for] support somehow less tangible. People can understand the benefits but not as tangible... If you are local it's either there or not there."(NZWEA)

There is a perception that opposition groups are networked, and share information and approaches:

"[There is a] network of opposition groups and much more information around now" (NZWEA)

"Its quite common to all projects now, they form a guardians group but they don't have a lot of widespread support" (ME)

There is a similar view of supporting groups:

"Of the 85% of distant support [in submissions], much of it appeared to be an orchestrated campaign, given the similarity of wording and that most of the support came from Wellington." (RG).

**Overall there seem to be mutually polarized attitudes between wind farm proponents and opposition groups about the nature and motivations of supporters and opponents. Wind farm proponents also believe there is a 'silent majority' of support for wind farm proposals that is not being voiced.**

Making a submission is generally seen as the main way support or opposition is voiced. But while numbers of submissions are sometimes taken to represent real levels of support or opposition, a regional council interviewee pointed out

"Hundreds of submissions doesn't mean support or opposition, it just means somebody's got a photocopier. You look at what the issues are, not the number of submissions." (EBOP)

As shown in section 3.3 above, both supporters and opposers use photocopied submissions. Certainly, for the resource consent decision-making process, submissions are not a 'numbers game' – it is the content and relevance that is taken into account. However submissions are a key way in which the public can formally voice their opinion, whether by repeat submissions or personally. **We suggest that it would be worth keeping records of submission numbers (opposing and supporting) on REG applications as they send a clear signal of public interest and concern, which may be of use in tracking and understanding shifts in public opinion towards renewable energy. Ideally, the content of submissions would also be tracked though this is obviously a far more time consuming, if more illuminating, task.**

#### **3.4.16            *Contrasts between different REG types***

It was decided not to carry out any interviews with people relating to marine energy, given that there was only one such proposal over 10MW (and one smaller), and unfortunately were unable to interview people regarding the proposed hydro case study. Of the two other renewable generation types, our interviews reinforce that wind is the most contentious, backing up the figures in section 3.2. However, the Meridian Energy representative noted:

"a lot of people prefer wind over hydro, they'd rather have turbines on a hillside that mucking up rivers ... it comes down to personal values and how they're affected" (ME)

The NZ Wind Energy Association suggests that opposition to wind is "increasing, [with] more vocal opponents." (NZWEA) A council interviewee, while speaking of geothermal developments, noted that in contrast:

"People get wildly upset about wind farms, because of the landscape and it's in your face" (EBOP)

They noted that geothermal was different, with “greater acceptance because it is less obvious compared to wind” (EBOP). Geothermal’s smaller footprint is also a factor in its greater acceptance: “the Nga Purua plant (130MW) won't be seen by 95% of the population” (NZGA). The Auckland University geothermal specialist felt that geothermal energy was well accepted, particularly amongst the Māori community:

“Geothermal is kind of different [to other generation types] ... I think geothermal has less opposition because there are less impacts.... [People say] ‘geothermal, that’s good stuff’” (AU)

Another unique aspect of geothermal developments is the financial involvement of Māori trusts and iwi groups, as discussed earlier. However, despite their apparent lack of contention, we were told that geothermal proposals could generate opposition if there are significant surface features such as hot pools that could be affected (AU), or “if it was a greenfield site, a pristine site.” (EBOP). There are also fundamental issues of respect and communication that are as relevant in geothermal as in any other REG type, as evidenced by the Putauaki Trust interview. The fact that many of the fields are on iwi land may also shape the nature and location of future geothermal development (NZGA).

**Overall, wind is generally seen as the most contentious type of REG, and this is borne out by the figures in section 3.3. This may in part relate to the high visibility and sheer scale of footprint of wind farms, and also because it is a new technology for New Zealand compared to hydro and geothermal.**

In future, geothermal may become more controversial as the more remote fields are tapped and geothermal generation occurs closer to population centres or valued resources. There is also a sense, borne out by the public response to Project Aqua, that New Zealand has reached its capacity for new major hydro developments, apart from maybe on the West Coast. **It is unknown how the public might in future respond to marine energy – certainly the first one at Kaipara has been appealed, and despite the relative non-visibility of many marine energy technologies, New Zealand has the unique issue of Foreshore and Seabed claims which may generate responses that are not experienced elsewhere in the world.**

#### **3.4.17 Policy and planning**

**Regardless of their position, the majority of those interviewed seemed to find something wanting in terms of fit-for-purpose regional and district plans, regarding provision for and siting of renewable energies.**

“I totally and utterly reject the whole process of choosing sites as it stands at the moment. I don't believe the applicants should have any right to choose sites. I think that whole cherry-picking culture needs to be rubbed out completely... My fundamental suggestion to all council planners is that councils need to... put up for submissions a prospect of a range of different areas that have viable characteristics before there is any market player... applicant. So councils have to actually control which designations within their particular plans and their territories are actually going to be viable for wind generation prior to any applicants and this needs to be independent and impartial, an almost quasi judicial, process.” (UPS)

“What NZ fundamentally need is a much more rigorous planning schedule to control market players, to control adverse environmental impacts when it comes to development,



specifically energy generation." (UPS)

A regional council interviewee considered:

"Particularly around wind energy generation, there needs to be some national input, or at least getting the regional and territorial authorities to have some collective thought around appropriate placement of wind farms." (RCA1)

The NZWEA interviewee felt that:

"Plenty of plans haven't recognised wind potential, [there's a] real variety. [It's] difficult to make provisions in plans, it creates a challenge." (NZWEA)

He noted that NZWEA has a current project to start establishing some guidelines to assist councils in developing policy relating to wind farms.

Regarding geothermal development, a regional council interviewee felt that "people are making decisions without an awful lot of policy guidance", though they went on to point out that this is now in the process of changing in the latest review of the regional plan (EBOP).

The lack of a clear regional policy position on wind generation was criticised by the Turitea Board of Inquiry:

"Horizons Regional Council has had its planning efforts slated as "reprehensible" after turning up to a wind farm board of inquiry and having almost nothing to say. Turitea Wind Farm inquiry chairwoman Judge Shonagh Kenderdine said yesterday it was poor that the regional council had so little to contribute to the decision-making process, but it was too late to do anything about it. Horizons planner Philip Hindrup told the board of inquiry the regional council set policy, but relied on district and city councils to decide what was appropriate or inappropriate development. "I think it is a very great pity," Judge Kenderdine said. "I think it's reprehensible that the regional council can vacate everything to district councils." The regional council's planning documents were important, she said...

Earlier in the day, Mighty River Power planning witness Greg Pollock told the board he had difficulty understanding how the council's regional policy statement should be applied, particularly its assertion that the Tararua Range skyline was regionally outstanding. Board member Richard Heerdegen said Horizons appeared to have done little to make clear what it actually meant. "I don't get the impression the regional council has been at all proactive." Commissioner John Hudson said he wanted Horizons to express an opinion on its own policies. He asked about the status of the ridgeline at the back of the Turitea Reserve, but Mr Hindrup was unable to help. Mr Carlyon said the regional council decided the Tararua Range was a significant landscape, but Palmerston North City Council had done nothing with that. It could have changed its district plan, but had chosen not to, he said.

<http://www.stuff.co.nz/manawatu-standard/news/3503417/Judge-Horizons-reprehensible>

**Overall, the absence of national and regional-level policies seems to be adding to a sense of uncertainty and risk, as neither the public nor developers have any certainty about appropriate locations for REG developments, and what scale and degree of proliferation might be appropriate. As a result, the public have no sense of what boundaries might be placed around REG developments generally, and in the absence of such boundaries,**

**developers will continue to propose new sites until they begin to be turned down. This uncertainty is perhaps partially responsible for strong public opposition to proposals, if the public feel that it is only their voice against developers that is holding wholesale proliferation in check. We suggest that better national and regional policies and guidance on REG would help diffuse this anxiety and perception of risk for both developers and the public.**

## 4. Common Assumptions and the Research Evidence

In this section we discuss ten commonly-held assumptions on the characteristics, nature and causes of opposition to renewable energy projects. These are either directly stated in the interviews we undertook, or are implied in the interviews. It is evident in our wider reading in international literature that power generation companies, local councils, community groups and policy makers also use at least some of these explanations to make sense of social resistance to REG.

But are these assumptions fact or fiction? Research has revealed that the ‘received wisdom’ around societal responses might not accurately reflect what is really going on. In this section we discuss these commonly-held opinions and what international and NZ research findings have to say about them.<sup>36</sup>

Most social research on REG has occurred in the past 15 years, and public responses to wind farms dominates this body of literature. This section therefore draws heavily from research into wind energy, and broader applications of the findings are only made where this is considered defensible.

### Summary of key points for Chapter 4

- Opinion polls internationally show that renewable electricity generation is strongly supported by the public. However by not asking questions about how people might qualify their support in a real situation, opinion polls may be giving a false reading of support.
- The disjunction between the apparent strong support for a development in general and weaker support at project level has generated much research. NIMBY as an explanation of this behaviour is not supported by research, and obscures the diversity of underlying motivations for opposition.
- People closer to renewable energy developments do not necessarily oppose them more than people far away. Research in NZ and internationally shows no reliable relationship between proximity and attitudes.
- Research on windfarms consistently shows that concerns about landscape values are almost always the dominant reason for opposition. Yet it is becoming clear that the reason for landscape-oriented resistance is not *only* to do with visibility, and that the unseen qualities of a landscape (such as attachment to place, and the symbolic values of the site) also play an important role in acceptance.
- It is commonly believed that people object because they are poorly informed. However, research finds little evidence of correlation between knowledge about wind power and its acceptance, and that many objectors appear extremely well informed about these issues. New Zealand research found that both supporting and opposing submitters to two wind farm proposals were well informed, but that non-submitters were poorly informed. Recognising the importance of ‘lay’ knowledge is likely to be of particular assistance in understanding the social acceptance of a given development.
- There is a widely-held assumption that there is a ‘silent majority’ in support of REG developments. Research has found that these non-submitters tend to have less extreme views than submitters (both opponents and supporters). They are not as concerned as opposing submitters about the negative aspects of wind farms, and less enthusiastic than supporting submitters about the positive aspects.
- People’s perceptions of the developer are strongly influential in influencing their attitudes to a development, as is the presence or absence of trust. Case studies in England, Wales and Denmark show that projects with high levels of participatory planning are more likely to be publicly supported

<sup>36</sup> An excellent summary of research up to 2005 relating to many of these assumptions can be found in Devine-Wright, 2005.

and succeed, and it is well established that local financial involvement enhances support for wind projects.

- While it is usually far more cost-effective to establish a few large REG projects than a number of smaller ones, this may be playing against social acceptability. An EU study found that where there was historic local experience with a technology, this engendered a 'local embeddedness' which leads to a greater level of social acceptance of that technology. The study also found that smaller scale projects tend to be more accessible for community ownership options, which can enhance local embeddedness. On the other hand, significant proliferation of REG can lead to resistance as well, as has been found in northern Germany, so there is likely to be a mid-range of social acceptability that needs to be identified in each case.
- From a social acceptance perspective, site selections based only on the technical characteristics of a site may only serve to exacerbate pre-existing sceptical beliefs and lack of trust between residents and developers. Identification of societal associations with potential sites may assist residents and development companies to find a common language to talk about proposals for change, thus reducing the likelihood of social conflict.
- A successful project is not necessarily one that has no public resistance. Resistance may bring to light issues that are not necessarily accounted for in the cost-benefit terms of business development, but might nevertheless be crucial to long-term social, cultural or ecological wellbeing.

#### **4.1 Assumption 1: “Renewable electricity generation is strongly supported by the public”**

Opinion polls internationally show consistently high levels of public support for renewable energy generally.<sup>37</sup> New Zealand is no exception, as shown above. The way opinion polls themselves are written and interpreted may also be part of the problem. Aitken (2010) questions the validity and usefulness of opinion polls themselves as a robust evidence base. She argues that there is no critical review of such polls examining inherent biases, the commissioning process, the influence of the media, or the levels of knowledge/engagement of those polled. By asking questions with very limited scope, polls do not for example reveal situations where people believe REG is a good idea but also believe there should be limits to its deployment, based on impact on landscapes, environments and ecosystems, and people. **By not asking questions about how people might qualify their support, opinion polls may be giving a false reading of public opinion.**

**The disjunction between the apparent strong support for a development in general and weaker support at project level has generated much research.** A phrase that is commonly used to refer to this disjunction is “the attitude-behaviour gap”. In relation to wind energy, Bell et al (2005)<sup>38</sup> suggest that this is evident at two levels: “The social gap is the gap between the *high* public support for wind energy expressed in opinion surveys and the *low* success rate achieved in planning applications for wind power developments. The individual gap is the gap that exists when an individual person has a *positive attitude* to wind power in general but *actively opposes* a particular wind power development.” (ibid. P 461). Focusing on the ‘social gap’, Bell et al. developed three plausible explanations: (1) that the social gap is caused by a democratic deficit – a majority support wind energy developments but a minority stop them; (2) that people have qualified support for wind energy (as suggested also by Aitken above) and (3) that people may support wind energy in general but actively oppose any developments in their own area for self interested reasons (the classic ‘NIMBY’

---

<sup>37</sup> Wüstenhagen et al., 2007.

<sup>38</sup> Bell et al., 2005.

explanation). These explanations will be discussed in more detail below.

#### **4.2 Assumption 2: “It’s just NIMBY (Not In My Back Yard) – people don’t like things in their backyards, even if they think it’s a good idea for the country generally.”**

The NIMBY concept suggests people have positive attitudes towards a type of development (in this case REG) until they are actually confronted with it (e.g. a wind farm being proposed for their locality), at which point they oppose it for selfish reasons (O’Hare, 1977). NIMBY has become commonly used by politicians, policy makers and developers of all kinds as a simple explanation of opposition. It has spawned a number of other similarly accusatory acronyms including the BANANA (Build Absolutely Nothing Anywhere Near Anything), LULU (Locally Unwanted Land Usage) and the NOTE (Not Over There Either). Amusing though these are, they confuse labelling with explanation, and do not provide explanations of behaviour either. The NIMBY ‘explanation’ has been exhaustively tested over the past decade, and is now widely discredited.<sup>39</sup>

Research to unravel the response that has been labelled NIMBY reveals that opposition is rarely motivated by pure self-interest - and even where it is, it may be equivalent to a concern for personal utility<sup>40</sup> - a concept that is used without pejorative associations as the basis of the theory of economics. But many other motivations for oppositional responses (to wind energy developments) have been identified. These have been grouped into concerns about the technology (anti-wind), concerns about the planning process (anti-process) and concerns about specific aspects of the project (anti-project).<sup>41</sup> These categories of oppositional response are likely to be relevant across all REG developments.

Even where public responses can be categorised as ‘patch protection’, this is not necessarily motivated by selfishness. Recent research suggests that so-called NIMBY responses can be reconceived as place-protective actions. Devine-Wright<sup>42</sup> suggests that people vest a great deal of their emotional wellbeing in their relationships with place, and place-identity and place-attachment can be deeply disturbed by proposed changes.<sup>43</sup> He argues that understanding the nature of these attachments is crucial to anticipating how people may respond to a proposal, and would be far more productive than simply labelling the response as NIMBY.

**Yet despite the absence of supporting evidence, NIMBY “continues to be given credence in academic and public discourse” as an explanation of behaviour.<sup>44</sup> Its unfortunate continued use hampers the vision of decision-makers and policy-makers by obscuring the diversity of underlying motivations for opposition.<sup>45</sup>**

---

<sup>39</sup> Aitken, 2009

<sup>40</sup> Bell et al., 2005

<sup>41</sup> Van der Horst, 2007

<sup>42</sup> Devine-Wright, 2005 & 2009

<sup>43</sup> See also Stephenson et al., 2010

<sup>44</sup> Ellis et al., 2007

<sup>45</sup> Wolsink, 2000 & 2006

### **4.3 Assumption 3: “People closer to renewable energy developments oppose them more than people far away.”**

**This assumption is associated with the NIMBY concept in suggesting that opposition is strongest where a development is in people’s own ‘back yard’. But international research into whether proximity had a relationship to opposition to wind farms has offered mixed results.** For example, an early a US study found that those living closer had more negative perceptions<sup>46</sup>, while more recent studies have found that those living closer to wind farms are more likely to speak positively of them than those not living in the vicinity.<sup>47</sup> Research in the Netherlands revealed that support or rejection of wind turbines in the Wadden region bore no relationship to the distance of respondents from the site.<sup>48</sup> A review of research in this field concluded that, on aggregate, proximity has a strong influence on attitudes to *proposed* projects, but the nature, strength and spatial scale of the response may vary according to local context, and proximity has less influence on people’s opinions of *existing* wind farms.<sup>49</sup> Overall, research has generally tended to disprove spatial determinism and provide evidence of more nuanced site-specific responses.<sup>50</sup>

New Zealand research has similarly found no reliable relationship between proximity and submitters attitudes.<sup>51</sup> The numbers of submissions on three windfarm proposals were compared, using a 15km radius to distinguish between locals and non-locals. For Project Hayes, local support was higher than non-local support, while opposing submissions from locals were significantly lower at 30% than for non-locals at 50%. In contrast, Project Mahinerangi had no local support while 17.5% of non-locals were in support and local objections (87.5%) far outweighed non-local objections (66.5%). With Project Whitehill, locals had higher proportions of both supporting and opposing submissions, while neutral views were more common among non-locals. **These findings are consistent with the variation observed internationally on the relationship between proximity and attitude for wind farms.**

### **4.4 Assumption 4: “The main thing people are concerned about is visibility.”**

**Research on windfarms consistently shows that concerns about landscape values are almost always the dominant reason for opposition.**<sup>52</sup> While many other concerns can be addressed through technical solutions, the nature of windfarms means that they are necessarily in elevated locations. As Ellis *et al* (2009) note, “high energy sites [for wind] tend to be in the landscapes society values the most, often with high cultural significance, important ecological niches and rare 'wilderness' qualities”.

---

<sup>46</sup> Thayer and Freeman, 1987

<sup>47</sup> Warren et al., 2005; Wolsink, 2000; SECRU, 2000

<sup>48</sup> Wolsink, 2006

<sup>49</sup> Van der Horst, 2007

<sup>50</sup> Devine-Wright, 2009

<sup>51</sup> Graham et al., 2009

<sup>52</sup> Wolsink, 2010

Early research on windfarms attempted to identify “which real or symbolic characteristics of the technology underlay local opposition”.<sup>53</sup> Applied research studies during the 1990s tended to focus upon visual and acoustic impacts, leading to “attempts to render turbines as silent and invisible as possible, presuming that this will increase their social acceptability”.<sup>54</sup>

**Yet is visibility really the issue when people speak of concerns for landscape values?** In New Zealand, the site for Project Hayes wind farm on the Lammermoor range in Central Otago. The proposal drew received 516 submissions in support, and 524 submissions in opposition. Feelings ran high – a prolific crop of letters to the editor and opinion pieces appeared in local newspapers over a period of years as the proposal inched its way through two protracted sets of hearings.<sup>55</sup> The key issue under discussion was simple: landscape vs turbines. Was the landscape so important as to require protection from this form of development? Or was it more important to use this windy site to generate renewable energy? In contrast, Project Whitehill, located on a ridge in the intensively farmed Waimea Plains, drew only 99 submissions and the overwhelming majority of these were in support.<sup>56</sup> Clearly, something more than just the *visibility* of the proposed turbines was at stake, given that the Project Hayes site was exceedingly isolated, and would be visible to a very small number of local people, and fleetingly at a distance from a minor state highway, while Project Whitehill would be visible to a far greater number of farmers, travellers and occupants of small towns.

This is not to say visibility is not a factor in social acceptance of windfarms, and considerable research effort has gone into ways to reduce the visual impact of turbines through tower design, colour, and the siting of turbines in relation to viewpoints. **Yet it is becoming clear that the reason for landscape-oriented resistance is not only to do with visibility or even aesthetics, and that peoples’ responses are most influenced by the particular qualities that people associate with the site. Rather than simply a response to visibility, it is the *perceived qualities* of a landscape in which a wind farm is sited that is the most significant factor in acceptance.**<sup>57</sup>

For example, in research on preferences for siting wind farms in the Wadden area of the Netherlands, the characteristics of the landscape were dominant in people’s decisions to support or reject wind power schemes on alternative sites. They found that the type of landscape “fully overshadows other attitudinal attributes, as well as other visual and scenic factors such as the design of wind turbines and wind farms, and the number and the size of turbines”.<sup>58</sup> How people value a given landscape appears to then influence the degree to which effects (including visibility) are acceptable.

**For wind, then, and possibly for other REG, the most important factor in the acceptability relates to the perceived qualities of the location – whether these are described as qualities**

---

<sup>53</sup> Devine-Wright, 2010

<sup>54</sup> Devine-Wright, 2010

<sup>55</sup> At the time of writing, the proposal had been refused consent by the Environment Court and this decision had been appealed by the applicants (Meridian Energy) to the High Court.

<sup>56</sup> Graham et al., 2009

<sup>57</sup> Wolsink, 2007 & 2010

<sup>58</sup> Wolsink, 2007, p. 2692

**of the ‘site’, the ‘landscape’, the ‘environment’ or other place-related terminology. Attachment to place, and the symbolic values of the site to both residents and non-residents, also plays a significant role in shaping people’s responses to a proposal.**<sup>59</sup> “The perception and valuation of all aspects of landscape quality are strongly connected to historically and culturally rooted factors, which vary widely in significance amongst individuals. Attitudes... are therefore very subjective and complex, but nevertheless contain strong elements of identity: cultural identity and identity of place.”<sup>60</sup> Quite simply, “some landscapes are more valued than others”<sup>61</sup>, and the perceived ‘fit’ of turbines with these qualities appears to be far more influential on public opinion than visibility alone.<sup>62</sup>

#### **4.5. Assumption 5: “People object because they are poorly informed”**

**It is commonly believed, but rarely openly stated, that opposers use carefully orchestrated misinformation to support their positions.** In an example from the UK, the YES2Wind website notes: “Misinformation and myths about wind power are often spread by people who want to oppose wind farms. Here we look at some of the most common myths, and give you the facts to counter them.”<sup>63</sup> Short (2002) suggests that “opinion is formed not by experience, but rather by ignorance, misinformation, prejudice and fashion” (p. 53), and Warren et al. (2005) call for disseminating ‘reliable’ information to counter myths (p. 872). It is inevitable that some objectors will grasp at any ‘knowledge’ they can find in literature or on the internet to back up their ‘belief’ that a development is wrong, or generalise from information from quite different situations, this can be equally argued of supporters.

While it is clearly in the interests of the public to be privy to the most robust knowledge available, the key question relating to social acceptance is to what degree information shapes opinion. Are objectors poorly informed, and would they support a proposal if only they could be made to understand ‘the facts’? Ebert<sup>64</sup> supports this contention, for example depicting supporters as more far-sighted than opponents, in that they recognised the environmental and community benefits of REG, thereby implying objectors to be ignorant.

**However, research overwhelmingly suggests differently. Ellis et al (2007) note “little evidence of any correlation between knowledge of wind power and its acceptance. Indeed, many objectors appear extremely well informed about these issues... Furthermore, by contrast, the positions held by supporters of wind power have not been subject to equal scrutiny, yet there are many examples of supporter discourses that are evangelical and ideologically committed to wind power to the point that they defy any constraints on the deployment of renewables.”**<sup>65</sup>

An early study by Gottlieb and Matre (1976) found that education did little to resolve

---

<sup>59</sup> Devine-Wright, 2009; Devine-Wright & Howes, in press.

<sup>60</sup> Wolsink, 2010

<sup>61</sup> Sovacool, 2009

<sup>62</sup> Ellis et al., 2007; Breukers & Wolsink, 2007

<sup>63</sup> <http://www.yes2wind.com/>

<sup>64</sup> Ebert, 1999 cited in Aitken, 2009

<sup>65</sup> Ellis et al., 2007



differences between advocates of conventional and alternative energy technologies. The researchers found that the two groups that had the most in common were the petro-chemical industry executives and conservationists – all educated, fairly affluent, and strongly committed – and yet these two groups were at opposite extremes of what they thought was the way forward for energy provision.<sup>66</sup>

Ellis *et al.* (2009) found no clear relationship between knowledge and acceptance of REG: “Indeed, many objectors appear extremely well informed about these issues.” They conclude: “Research has found that this objecting to wind power proposals do not have any less understanding of issues, such as climate change or the viability of wind power technology. Ignorance is rarely a source of opposition” (p528).

**This conclusion is echoed in New Zealand research which found that both supporting and opposing submitters to two wind farm proposals were well informed, but that non-submitters were poorly informed.**<sup>67</sup>

Most submitters had high levels of engagement and a good deal of information about the proposal. Almost all of the submitters in support received personal notification from council, and/or information directly from the developer, including in some cases, ‘folders of information’ and CDs. One received information from family and friends. About half also attended public meetings, open days, and/or site visits. Only one supporting submitter had failed to receive any information or be engaged in any way.

The opposing submitters, if anything, were even more engaged, but in different ways. Of the twelve, three were personally notified by the council, and five (one overlapping with the former) received significant information from the developer, including large documents and DVDs. Most other submitters stated that they did not receive any unsolicited written information directly from council or the developer. Some received information but only after they asked, or found it on a website, and one admitted to secretly taking a document that was on display at a public meeting. All the Kaiwera opponents attended public meetings and other information events, but only two of the Mill Creek ones did. Two opposing submitters (one at each wind farm) gained most of their information from groups set up to resist the wind farms.

Non-submitters were far less well-informed and engaged. Two Kaiwera non-submitters received information packs from the developer, and one of these also received the public notice in the mail from the council, but the remainder got no information from either source. Almost all the Kairewa non-submitters had read about the proposal in the newspaper, but a couple of the Mill Creek ones had not even noticed any news coverage. Only a few non-submitters had noticed the call for submissions in the paper. No non-submitters reported any personal contact from the developer. They were not necessarily complacent about this lack of information: one said “we’ve had no communication from the council and one communication from the developer. We’d hardly know it was going ahead, it’s been hopeless.”

Excerpt from “Does the Silent Majority support windfarms?”<sup>68</sup>

---

<sup>66</sup> Sovacool, 2009

<sup>67</sup> Hoffman et al., 2009

<sup>68</sup> Hoffman et al., 2009

Ellis et al observe that although wind farm debates may appear to hinge on disagreements over empirical ‘facts’, “at a deeper level the social acceptability of wind farms is inextricably linked to values, world views and the way localities are related to the wider global environment”.<sup>69</sup> While opponents and supporters to REG may appear to be contending on the basis of potentially disputable facts, the issue at stake is generally more fundamental, relating to different sets of values and expectations.

For example, most attempts to understand public opinion of REG focuses on acceptability of the technology. But given that location/landscape is the overriding issue for objectors, it would seem clear that “the most relevant attitudes are not those related to “wind power” in general , but those related to a specific wind scheme, as these are shaped by the attributes concerning the landscape quality of the site instead of attributes related to ‘the energy system’.”<sup>70</sup> Ellis *et al.* (2009) argue that developers “urgently need to be informed about the strong influence of landscape factors because they appear to have limited understanding of how to address the subjective nature of landscape perception.”

**Ultimately, people’s responses to development proposals relate more strongly to their values and beliefs than analyses of ‘facts’ – even though ‘facts’ may be marshalled to support these values.** And as New Zealand’s Resource Management Act makes clear, values are an important part of the decision-making process. To discover these values, REG developers might do well to place less emphasis on informing communities about a proposal and more on being informed by communities as to the qualities of potential REG sites. “The exclusion of local actors with intimate knowledge about landscape quality, its valuation, and its local variation create resistance against wind power schemes”.<sup>71</sup> **Management and planning agencies need to be aware of “the considerable differences between expert view(s) and the view(s) of the general public. If major decisions are based on expert views only, they may fail to meet public needs and risk causing resistance.”**<sup>72</sup> **Recognising the importance of ‘lay’ knowledge relating to these matters is likely to be of particular assistance in understanding the social acceptance of a given development at a given site.**

The media may also play a role in influencing opinion, and particularly in ‘hyping’ issues as a result of the desire to report stories of conflict or disagreement, or conveying a particular position on an issue. For example, research in the USA<sup>73</sup> contrasted how wind energy is portrayed in the media in three different states. It found that the media discourse in Massachusetts emphasised the risks of wind technology through aesthetic, cultural, environmental, health and safety frames. Texas media focused on the business perspective through an economic frame with comparatively little discussion of risk. In Minnesota, the discourse was generally positive within an environmental framing, with risks discussed in terms of technical and economic issues.

While the media certainly plays a role in information flow, and in doing so may filter or colour a particular issue, as in the US example, it also has a wider role in enabling open

---

<sup>69</sup> Ellis et al., 2009

<sup>70</sup> Wolsink, 2009

<sup>71</sup> Breukers & Wolsink, 2007, p. 105

<sup>72</sup> Hunziker et al., 2008

<sup>73</sup> Stephens et al., 2009

public debate. Most newspapers, for example, have letters to the editor and opinion pieces in which members of the public can air their views. Increasingly, too, the use of internet tools has meant that the public have a wide range of options from which to source information and are no longer reliant on a limited range of media outlets. **In this sense the media can be seen as part of the context of social attitudes, arguably as much shaped by them as a shaper of them.**

#### **4.6 Assumption 6: “There is a ‘silent majority’ of people who support proposals but don’t make submissions.”**

**There is a widely-held assumption that those who object to REG proposals are a vocal minority, and that there is a ‘silent majority’ in support.** A recent example is TrustPower spokesman Graeme Purches, referring to a proposed hydro development: “It’s like all of these things – you get a minority that can make an awful lot of noise and they seem like they’re a huge voice but are actually a very small number of people.”<sup>74</sup>

There is surprisingly little research on the views of those who do not make submissions, and little as well on those who support proposals. “Although there are always two sides to these [REG siting] conflicts, research has focused almost exclusively on ... analysing only the attitudes of the opponents and ignoring those of the supporters in the disputes... tell[ing] only half the story.”<sup>75</sup>

The only research on this topic that could be found was carried out in New Zealand.<sup>76</sup> The research drew from 33 interviews with residents in the vicinity of two wind farm proposals at Kaiwera Downs in Southland and Mill Creek in Wellington. The findings showed no evidence of a ‘silent majority’ of non-submitters in support of the wind farms. Most of the non-submitters were ambivalent about the project. The rest of the non-submitters were divided between support and opposition, and even these opinions were rarely wholehearted.

**Contrasting the views of submitters and non-submitters, it was found that non-submitters tended to have less extreme views than submitters (both opponents and supporters). They were not as concerned as opposing submitters about the potential negative aspects of wind farms, and less enthusiastic than supporting submitters about the potential positive aspects.**

Most of the non-submitters stated reasons for not submitting related to personal circumstances, or to lack of impact of the development on them personally. Some other factors, such as lack of information, a sense of powerlessness, and perceptions about local benefits, also seem to play a role. A further point not explored in the NZ research is the different motivations to submit: “if you support a wind farm, the case... is already being made by the developer, so there is no motivation to engage.”<sup>77</sup>

---

<sup>74</sup> North&South, April 2010

<sup>75</sup> Wüstenhagen et al., 2007

<sup>76</sup> Hoffman et al., 2009

<sup>77</sup> Hadwin, 2009, p. 533

The NZ findings also suggested some interesting differences between supporters and opponents of wind farms. One difference was in the ease of their sourcing of information; another was their apparent different experiences and perceptions of the developers; and the third was that opponents seem to be concerned that benefits flow back to the community, while supporters reveal more interest in personal and national benefits.

**While communicating positive national benefits from a windfarm development will help with overall opinions and support, it appears that this strategy is unlikely to win over some submitters who oppose the development because their concerns are independent of these benefits. Better understanding of the different motivations and concerns of objecting and supporting submitters would clearly seem to be important if wind farm developers wish to minimise opposition. This is an area that would benefit from further research.**<sup>78</sup>

#### **4.7. Assumption 7: “It doesn’t matter what people think of the developer, just whether the proposal is a good one or not.”**

**Although the nature of a REG proposal and its measurable impacts are certainly key influences in social acceptance, people’s perceptions of the developer are also hugely influential.** It is well established that positive perceptions of the developer are associated with positive attitudes towards a proposal, and *vice versa*: “the more the developer can win public trust, the more likely that the developer will get his/her development sited”.<sup>79</sup>

In the past few years, the quality of relationships between people and developers, and how this affects social acceptance, has become another focus of international literature on REG. Devine-Wright summarises this well:

“More recently, research has shifted the focus of inquiry towards the process of technology deployment, presuming that local opposition is not so much caused by characteristics of the technology itself, as by predominantly top-down decision-making procedures sometimes referred to as the ‘decide - announce - defend’ model (Wolsink, 2007). From this perspective, public opposition arises due to a lack of meaningful opportunities for local residents to participate in, or benefit from, renewable energy projects (for example by becoming financial stakeholders in cooperative ventures, by contributing to decision-making in land-use planning, or by receiving tangible rewards from community benefit packages) (Bell *et al.*, 2005; Gross, 2007; Hindmarsh and Matthews, 2007). In parallel with this research, there has been a flow of policy guidance and best practice documents encouraging project developers to engage with the public and other stakeholders in more meaningful and timely ways, and to consider distributing financial benefits to local residents (e.g. British Wind Energy Association, 2004; Department of Trade and Industry, 2007a; 2007b).<sup>80</sup>

**The importance of relationships and trust is shown in the findings of several NZ studies on wind farms.** In one study of three wind farm proposals, poor opinions of the developer were the 3<sup>rd</sup> to 6<sup>th</sup> most commonly-cited reasons for opposition in submissions. Some submitters referred to good or bad experiences with public participation and consultation,

---

<sup>78</sup> Hoffman et al., 2009

<sup>79</sup> Upreti and Horst, 2004

<sup>80</sup> Devine-Wright, 2010

but perceptions of the developer from other experiences could also colour the submitters' responses. A common theme was whether the company was seen to be a 'good citizen' or not.<sup>81</sup>

There were similar findings in the 'Silent Majority' study:

"Another stark difference that showed up was people's opinions of the developers' consultation and information. There was no question on this topic, but unsolicited comments were made at various points of the interviews. All but one of those who submitted in opposition to the wind farms had negative things to say about the quality of information provided by the developer, from "slightly misleading" MSO1\*, "they don't lie outright but they tell you what they want you to know" KSO3, "misleading or exaggerated" MSO5, to "recanting on promised benefits to the district" KSO3. They also reported negative experiences with developer representatives, including bullying, being unpleasant, refusal to compromise, and stories changing. "...they've really been quite rude in dealing with us – I could give you examples of some of the things they've done, but as far as communication with us, its been virtually nil until the project was well under way" MSO5. One felt that meetings were little more than PR exercises, and another felt that if they had been approached more openly then community reaction would have been more positive.

"In contrast, the three supporters who stated a view on this (all at Kaiwera) had positive opinions of the developer. For example, KSS2 said the developer was "pretty open and transparent about everything" and "from what I gather [the developer] has been actively working with those people that are concerned ... to try and negate the effects on those people".

"No non-submitters made comments on their views of the developer, which is not unexpected given their lack of engagement."<sup>82</sup>

Excerpt from "Does the Silent Majority support windfarms?"<sup>83</sup>

\* letter/number combinations refer to interviewees

In another study, 366 Otago farmers were asked whether they would be willing to provide their land for a wind energy project. Twenty-nine percent of the respondents would make their land available to an electricity company, but 49% would not. When asked if they would provide their land for 'another investor' for a wind farm, 36% would do so while 40% would not. As a whole, these findings indicate a level of distrust or concern about players in the electricity industry that may be affecting social acceptance.

Two aspects of the relationship between developers and society appear to have a particular bearing on acceptance – the extent to which people feel that what is of value to them has been understood and responded to by the developer, and the related issue of trust. The Create Acceptance report sums up the first aspect succinctly:

---

<sup>81</sup> Graham et al., 2009

<sup>82</sup> Hoffman et al., 2009

<sup>83</sup> Hoffman et al., 2009

“[L]ocal residents are not opposed to developments because of NIMBY issues, but because they are insufficiently engaged in decision[-]making, and their needs are not taken into account in the planning process. Positive experiences from community ownership programmes - also in other contexts than Denmark and Germany - appear to support this interpretation (e.g. Sørensen et al., 2004; Leany *et al.*, 2001; Hain *et al.*, 2005). Predac (2003) and Johansson and Turkenburg (2004) have also pointed to differences in spatial planning procedures as a factor underlying the variations in public support and opposition in different countries. Thus, the main factor that seems to emerge as an explanation for variations in local support or resistance is the level of participation of local residents... Few studies, however, have examined carefully what happens when residents participate in the process, and hence the specific role and nature of participation in explaining success is still somewhat unclear.”<sup>84</sup> Certainly, local discontent can be exacerbated by poor project management and insensitive decision-making processes.<sup>85</sup>

**Breukers and Wolsink (2007), judging that local involvement in siting decisions is crucial to implementation success, recommend facilitating local ownership and institutionalising participation in project planning to ensure key aspects of a plan are not neglected (e.g. landscape, cultural). Case studies in England, Wales and Denmark show that projects with high levels of participatory planning are more likely to be publicly supported and succeed.<sup>86</sup> And it is well established that local financial involvement enhances support for wind projects.<sup>87</sup>**

Pre-application discussions can be useful as a respectful and open-minded approach for developers with communities/local planning authorities.<sup>88</sup> “The developmental nature of many [REG] technologies ... offers decision-makers important opportunities to make citizens a core part of the innovation process by going beyond the orthodox approach and engaging citizens in the 'upstream' before policy choices are actually made.”<sup>89</sup> This is supported by the findings of the Create Acceptance project, where case studies showed early participation enabled project managers to better integrate local contexts into project designs. The ESTEEM tool developed as part of the Create Acceptance project applies a structured process, facilitated by an external consultant, to identify stakeholders and work with the project manager to resolve potential issues at an early stage in the process.

**Trust in the developer also has a powerful influence on attitudes.** A special edition of Energy Policy (No. 38 2010) was dedicated to a series of articles on the role of trust in the transition to sustainable energy. The editorial points out that shifting to sustainable energy frequently involves a disjunction between private interests and the public good. This involves in the first instance a high degree of cooperation, which will not necessarily be based in congruent interests, so may have instead to depend on discovering and pursuing similar values. Second, it often involves uncertainty, both in breaking with the *status quo* and in facing new pathways. Third, it often involves a degree of risk – both for a developer

---

<sup>84</sup> Heiskanen et al., 2007, p.25

<sup>85</sup> Breukers & Wolsink, 2007; Ellis et al., 2009

<sup>86</sup> Loring, 2007

<sup>87</sup> Pasqualetti et al., 2002; Bolinger, 2005; Hinshelwood, 2009

<sup>88</sup> Miner, 2009

<sup>89</sup> Dunlop, 2009, p. 281

in pursuing a proposal, and for the community in considering the potential impacts of the proposal on their own world. The editorial concludes “It seems, then, that a large measure of trust is necessary if we are to cooperate, manage the uncertainties and confront the risks of working towards a sustainable energy future. Though trust might seem like motherhood and apple pie, it is no comfort that trust is necessary, for it is fragile, hard to achieve and even more difficult to maintain.”<sup>90</sup>

**The presence or absence of trust is hugely influential on social acceptance of change.**

“Siting decisions are always heavily loaded with risk components: environmental, economic and social risks.”<sup>91</sup> The public is unlikely to accept risk that they perceive to be present unless they have a level of comfort with the credibility of the developer and of the assurances that the developer makes. Gaining trust involves avoiding polarisation:

“Meaningful participation ... cannot be undertaken with the assumption that certain participants (i.e. objectors) are wrong or less legitimate... in order for trust to be meaningful it cannot be conceived as a means to a particular end – i.e. less opposition and more wind farms.”<sup>92</sup>

**4.8 Assumption 8: “It is better to have a few big projects than lots of small ones.”**

**While it is usually far more cost-effective to establish a few large REG projects than a number of smaller ones, this may be playing against social acceptability.** Again, the evidence in this section mostly relates to wind farm research, but as noted in section X, no REG proposals of any kind under 10MW appear to have been challenged to the Environment Court.

Two New Zealand surveys have shown higher support for smaller-scale wind farms. Schaefer’s study (2010)<sup>93</sup> found 78% of Otago farmers were supportive of small wind farms (fewer than 5 turbines) in their district while only 54% supported large wind farms (more than 50 turbines). A landowner survey from the North Island showed very similar results, with 80% of the respondents positive about a 2-turbine project and 50% positive about a 14-turbine wind farm in their area<sup>94</sup>(Barry and Chapman, 2009). Other international opinion surveys have also found that the acceptance for small wind farms is higher than for large wind farms (Devine-Wright, 2004; Lee et al., 1989; Wolsink, 1989). ‘Favourability gradients’ have been identified in various studies, whereby acceptance of wind projects decreases as the number of turbines increases (Lee et al., 1989, Wolsink, 1989).

While the proliferation of small scale wind farms could be said to cumulatively create a similar impact to a single large scale wind farm, an important point relevant to social acceptance is that people’s experience of wind turbines appears to have a positive correlation with acceptance. For example, a German survey from 2007 found that 67% of participants who lived with wind turbines in their area felt positive about wind turbines,

---

<sup>90</sup> Bellaby et al., 2010

<sup>91</sup> Wüstenhagen et al., 2007

<sup>92</sup> Aitken, 2009

<sup>93</sup> Schaefer, 2010

<sup>94</sup> Barry & Chapman, 2009, p. 3364

while of those who had turbines in their neighbourhood, only 51% were positive (REA, 2010). The same effect was found in the North Island of New Zealand where people in the Masterton region (an area with wind farms) were more supportive of wind energy than people from New Plymouth (no wind farms in the area) (Barry and Chapman, 2009).

**The EU's Create Acceptance project compared acceptance of REG in various European countries, and found that where there was historic local experience with a technology, this engendered a 'local embeddedness' which leads to a greater level of social acceptance of that technology. The study found that smaller scale projects tend to be more accessible for community ownership options which can enhance local embeddedness (Heiskanen, E. et al., 2007).**

Compared to Europe, New Zealand has a history of far fewer small-scale REG deployments. The European policy environment has encouraged REG at individual and community scales using measures such as feed-in tariffs and favourable taxation/consenting laws for small-scale projects.<sup>95</sup> New Zealand lacks such measures, and for NZ power generation companies, economies of scale are all-important.<sup>96</sup> **However if there is a desire to engender greater local acceptance of REG it may be worth considering smaller projects even if they are financially less viable, particularly in areas where the technology is unfamiliar. On the other hand, significant proliferation of REG can lead to resistance as well, as has been found in northern Germany<sup>97</sup>, so there is likely to be a mid-range of social acceptability that needs to be identified in each case.**

#### **4.9. Assumption 9: "Site selection should first and foremost be based on the technical characteristics of a site."**

**The recently-completed Renewable Energy Assessments of regions across New Zealand reveal the technical capacity of resources to provide renewable energy. From a social acceptance perspective, such a study is only a partial assessment, as the socially relevant qualities of the sites have not been assessed.** It could therefore be questioned whether such assessment are then accurate assessments of REG potential.

Devine-Wright<sup>98</sup> questions the use of the term 'site' as a way of referring to the location of REG developments, and instead argues that better decisions would be made if developers instead considered location in terms of 'place'. "The siting perspective has several adverse consequences for public engagement. Firstly, it provides a rather limited perspective from which to capture the full range of locational issues that may come to the fore during consultations on a specific development proposal, since residents and visitors do not engage with a site, they engage with a place that is simultaneously material and psychological, objective and subjective. Public engagement strategies informed by the siting perspective are in danger of playing down or completely overlooking the symbolic and emotional associations people may have with the locality faced with development. Engagement

---

<sup>95</sup> Barry & Chapman, 2009

<sup>96</sup> Meridian, 2006; PCE, 2006; Barry and Chapman, 2009

<sup>97</sup> Krauss, 2010

<sup>98</sup> Devine-Wright, 2010



informed only by siting may never reveal important place-related issues that inform local responses to development proposals. **Overlooking such associations may only serve to exacerbate pre-existing skeptical beliefs and a lack of trust between residents and development companies. It may contribute to an inability of residents and development companies to find a common language to talk about proposals for change, thus magnifying the likelihood of social conflict.**"<sup>99</sup>

In a similar vein, Stephenson (2010) points out that planning has historically had little regard for the interactions of people with place, preferring instead to rely on 'experts,' to identify significant qualities of 'sites,' most commonly physical/geographical rather than cultural/social. She calls for planning to 'draw inspiration from other disciplines to rethink approaches to place, moving from the purely physical to include more embedded and intangible qualities of people-place connections.'<sup>100</sup>

#### **4.10 Assumption 10: "A successful project is one that has no public resistance."**

Is a successful project one which has a good public inclusion process, minimal objections, and a successful 'techno-economic' outcome (as suggested by Heiskanen, E. et al., (Create Acceptance) 2007)? Or does public resistance have a useful role in project decision-making?

The European Create Acceptance project developed the ESTEEM tool to help REG projects gain social acceptance through improving the process of deployment of renewable energies. The rationale was that "social acceptance has a 'public good' aspect ... this is one reason for policy makers and institution-builders to support such efforts." But are opposing stakeholders merely a mismanaged issue that can be resolved by improving the process? Or might there be some value in resistance?

**The fact that surveys show the majority of the public support the concept of REG has meant that opposition has been seen as deviating from the majority view and therefore less legitimate.**<sup>101</sup> Ellis *et al.* (2007) note that this underlying attitude has led previous research to focus almost exclusively on objectors and therefore to ignore the ways in which support is constructed and to "marginalise and denigrate oppositional voices to schemes that portrayed as being environmentally progressive."

**In essence, social resistance to REG is based on the conundrum that a proliferation of REG plants means sacrificing things of social/environmental value to meet an ever-growing demand for energy to fuel economic growth and wealth. The dominant discourse around energy and climate change promotes a move to sustainable electricity generation while still aspiring to unchanged growth aspirations.** As Aitken (2009) states "The literature [to date] exhibits a largely uncritical faith in international and national energy policies... [and] to see its purpose as identifying ways to reach the targets for ... deployment of RE." In doing so, opponents are cast as lacking in public spirit, standing in the way of progress, and having only self-interest at heart.

---

<sup>99</sup> Devine-Wright, 2010

<sup>100</sup> Stephenson, 2010

<sup>101</sup> Aitken, 2009

**Yet social resistance offer opportunities to be explicit about the trade-offs involved in establishing REG – not only local trade-offs of environmental or cultural qualities, but broader trade-offs around other options energy efficiency, energy conservation, or other RE options.** The need for open debate is demonstrated by a comment from TrustPower spokesman Graeme Purches: “If people want to live in a modern way and come home and watch television and have the lights on and have heat pumps in winter then, yes, there is a price for that and the price may be that we interfere with a river.”<sup>102</sup> Or to repeat a common rhetoric: What would those opposing a dam do if they were told how much energy they would need to save personally to make their particular hydro project unnecessary?

If there is a lack of understanding of the trade-offs involved so people can continue to have access to cheap and abundant sources of electricity, then possibly this is a debate that needs to be entered into at a broader scale rather than argued in an unsatisfactory way at each local hearing where a specific REG development is opposed. It would certainly assist policy makers in considering the implications of policy, “to analyse these trade-offs and reduce uncertainty about policy action, decision-makers must be willing to engage with a variety of sources of policy learning... learning from experts and society... [It] may serve as antidote to the wishful thinking that underpins some of the more ad hoc policy selection and improve decision-makers' peripheral vision.”<sup>103</sup>

Insights into the value of debate are given by Bruland’s (1997) research on public resistance to nuclear power: “I have emphasized the social complexity of these types of historical patterns of resistance to new technologies. A final point which I should like to make is that we should not necessarily regard such resistance in a bad light; we might even want to reconsider the pejorative aspects of the term ‘resistance’, and question whether it is the right term for discussing such phenomena. If the only standard for judging a technology was productivity, the resistance which I have described to ... nuclear power, might attract condemnation. But societies have social as well as economic aims, and economic perspectives are just one element of social and political values. This makes judgements on resistance to certain technologies a much more nuanced matter; if a particular culture wishes to ... forego the risks associated with nuclear power plants, then economic criteria are no more relevant than any other standard of judgement. This kind of ‘resistance’ could thus be seen as a positive part of a social selection process, not an obstacle to the inevitable march of technological progress.”<sup>104</sup>

**Bruland’s points are a salutary reminder of the importance of societal scrutiny in determining the direction of development. Resistance is not necessarily something to be avoided, and may bring to light issues that are not necessarily accounted for in the cost-benefit terms of business development but might nevertheless be crucial to long-term social, cultural or ecological wellbeing.**

---

<sup>102</sup> North&South magazine, April 2010

<sup>103</sup> Dunlop, 2009

<sup>104</sup> Bruland, 1997, p. 144

## 5.0 Discussion

Limits on greenhouse gas emissions, and the search for energy security will inevitably require a shift to more renewable electricity generation, and more efficient use of the energy that we do produce. For most countries around the world this will mean significant changes at a landscape scale. Some of the more obvious renewable energy developments which are already causing landscape-scale change internationally include land-based and offshore wind turbines, bio-energy crops, solar devices, and small-scale distributed generation of many types. The renewable energy transition will arguably be the number one driver for landscape transformation in the 21<sup>st</sup> century.<sup>105</sup>

While New Zealand's relatively high proportion of REG means that we are well advanced in some senses, the government's 90% renewables target still requires significant amounts of REG to be established over the next 15 years, and this will necessarily be unevenly distributed across the land according to the location of RE resources.

Societal acceptance of this energy transition does not only involve acceptance of particular technologies, but also involves the place attachments, beliefs and knowledge of individuals, groups and the public at large. We can also say that it is affected by the quality of their relationships with energy developers and government institutions, and we suggest it also relates to the degree to which the public feel a sense of ownership (actual or metaphorical) of the development.

In this section we discuss whether New Zealand has a problem with a lack of social acceptance of REG, in terms of these wider issues. We then touch on the relevance of the EU's Create Acceptance findings. Finally we discuss how social acceptability of REG might be enhanced.

### 5.1 Is there a problem with lack of social acceptance?

This question can be considered in three ways – is there a lack of social acceptance? is lack of social acceptance unduly holding back the development of new REG? and is lack of social acceptance a problem?

#### 5.1.1 *Is there a lack of social acceptance of REG?*

Our conclusion is that while some REG developments are clearly contentious, it is well supported as a concept by the New Zealand public. However it does appear that there has been a falling-away of support for all forms of renewable energy developments between 2004 and 2009. This drop is most dramatic with wind, but every generation type shows a drop in 'very supportive' opinions, in most cases associated with an increase in 'supportive' opinions. This suggests a shift to more qualified, circumspect support towards renewable

---

<sup>105</sup> As pointed out in the introduction to a recent (2010) special edition of the international journal *Landscape Research* - Nadai & Van der Horst, 2010

energy generation. Renewable energy generation remains more popular than non-renewable. Non-renewable energy generation remains the least favoured and is becoming less popular. It is of concern that the public appear to feel less well informed about energy generation than they did in 2004 (section 3.1)

However, as is clear from section 3.1, there is still a high level of general public support for REG. Interestingly, the highest level of support is for wind, which other evidence suggests is more contentious than other less favoured forms of REG such as geothermal. Yet even the two oppositional groups we interviewed were not opposed to renewable energy developments *per se*. They accepted the need to shift to a renewable energy future, and were on board with energy sustainability, but they did question the way that this shift was being implemented – they wanted more emphasis on smaller scale developments, on energy conservation and efficiency, on recognising cultural and environmental values, and on not putting developments in inappropriate places.

Section 3.3 shows that apart from coal and marine (which each had only one application, and that application was appealed) wind farms are proportionately more appealed than hydro, geothermal, gas or diesel. Some information on geothermal appeals was not found, but all information suggests it is the least contentious of all energy generation types. There was a notable increase in appeals relating to renewable energy developments in the mid-2000s but this aligns closely with an increase in the number of applications (mostly wind), so it is not safe to assume an absolute increase. As numbers of applications have dropped, so too it seems have the appeals. However, note that social issues are not always involved in appeals, so they are not an accurate indicator of social resistance.

The cumulative growth in wind developments in the Manawatu seems to be causing increasing resistance to new proposals in this region, judged by the increase in oppositional submissions over the past decade.

We have concluded that there is fundamentally a widespread acceptance of renewable energy generation amongst the New Zealand public, but that there are a number of unresolved or poorly addressed issues which are causing or exacerbating friction. These issues will be identified and discussed in section 5.1.3.

### ***5.1.2 Is lack of social acceptance unduly holding back REG developments?***

New Zealand's planning system is set up to enable the public's voice to be heard in the decision-making process. Whether the airing of these voices is unduly holding back REG may be a matter of perception. If a successful development is measured by the criteria of an absence of objections or appeals, then certainly it could be said that the public voice is affecting the ability of REG developments to pass through the resource consent system as rapidly as possible. If on the other hand the public's voice is considered to be a valuable way to identify effects, point out shortcomings, and shape a development so as to best achieve a sustainable outcome, then a slower process can be considered the price to pay for a better result for all in the long run.

Kieran Devine, Transpower General Manager Grid Performance, believes that the time to obtain resource consent does not vary much from what is the norm internationally:

“I have relatively little sympathy for the current group of people who are whingeing about how long it [RMA] takes. As far as I am concerned that's just poor planning. There are some very good case studies that say the consent process will take 3 to 4 years to get these things. That's not horrendously different from anywhere else in the world. If you go particularly to the English speaking OECD countries, they all have consenting processes, and there are differences, but the reality is to consent a large gas fired power station or wind turbines [...] most of technologies require a reasonable period of time.” (cited in Schaefer 2010)

Our figures on processing times for wind power (section 3.3) show only one 3-year delay. Of the remainder of applications, even appealed proposals take an average of 21 months (mode is 24 months), while non-appealed proposals take an average of 6 months. By European standards, as discussed in section 3.3.2, NZ has relatively rapid processing times.

Our analysis of decisions and appeals (section 3.3) shows that out of a total of 70 applications, there have been only 2 refusals of consent for energy developments (including non-renewables) in the past 10 years – both being for the Te Waka wind farm development (Project Hayes was declined at the Environment Court but this is currently being appealed to the High Court). This is a very good success rate by international standards. Some other decisions have resulted in proposals being reduced in scale, or limited to location.

It is evident that some approved REG is not developed immediately, but ‘banked’ until conditions are deemed more appropriate, and only occasionally is the project discontinued permanently. The potential for further REG expansion exists but is not yet being taken up.

We suggest that there is no evidence that REG developments are being seriously delayed or halted because of a lack of social acceptance, given the high success rate and decision timeframes.

### **5.1.3 Is lack of social acceptance a problem?**

Despite this, we have concluded that there are problems with the social acceptability of REG. These problems are manifest in a number of areas, in part as responses to specific REG proposals, but mostly in those aspects of the ‘energy transition’ that are not dealt with in the resource consent decision-making process.

At the most fundamental level, we suggest a problem is the tendency, explicit in some of the interviews, to view the public as *the* problem; the sense that the public should not resist change that is good for the nation as a whole. As sections 3 and 4 show, there is a perception by some that negative public responses to REG are irrational, self-seeking and/or ill-informed, and are unduly holding up progress.

This is in part driven by some common beliefs about public responses to REG which, under examination, hold little weight. Our study, looking at both the NZ context and international literature, suggests that:

- While a significant majority of the public generally supports the concept of renewable energy, this level of support is rarely carried through to specific

developments, at which point people are in a position to review the actual impacts and trade-offs involved. For this reason, the difference between public opinion polls and levels of opposition to specific projects is unsurprising.

- Opposition to specific developments is rarely driven by NIMBY motives, and the NIMBY concept is widely discredited as an explanation for oppositional behaviour. Opposition can be more usefully classified into concern about the technology, concern about the process, and concern about specific aspects of the project.
- There is no consistent relationship between proximity to a development and levels of opposition – this varies greatly with the context
- While visibility of REG developments (particularly windfarms) is frequently raised as an issue, it is evident that social/cultural/environmental values of the site or landscape have a greater bearing on responses than purely visual factors. Visibility may be used as an oppositional argument because these other values are given less attention in site selection and consent processing, but concern may originate in more deep-seated qualities of place attachment.
- Siting decisions are crucially important for social acceptability, and not all sites are equal in the public eye. While the technical qualities of the site may be seen as the most significant drivers for the developer, the social, environmental and cultural qualities of the site and its environs will be the most important aspects for the public.
- Many submitters are well informed. It is evident that oppositional groups seek information from many sources, not just from the developer, and may be concerned with wider issues than just a specific proposal – for example, they may question the efficacy of a technology, or suggest that energy efficiency should be given greater weight than new generation.
- Opponents and promoters of wind farms both claim that the ‘other side’ sometimes makes inaccurate claims to support their position. Promoters have a perception that oppositional groups use dubious sources of information (often off the internet) to support their position; while opponents have a perception that promoters sometimes fail to openly share potentially negative information.
- The ‘silent majority’ - people who do not make submissions on specific REG proposals - cannot be assumed to be supportive of those proposals.
- The media does have an influence in shaping public discourse, but is also influenced by the wider social-economic context, and tells both negative and positive stories about REG.
- Even the best proposal could meet resistance if there were poor quality relationships between the developer and the public and/or stakeholder groups. Less than optimal interactions with the public can lead to lack of trust in developer assurances and information. The presence or absence of trust is hugely influential on social acceptance of change, because all change involves risk.
- Bad experiences with development in the past can create a legacy of mistrust which will carry on to new proposals.
- While it is usually more cost-effective to establish large-scale REG developments, these are more likely to engender public opposition. Research in NZ and

internationally shows a strong preference for smaller scale developments, particularly with wind.

- Social resistance *per se* is not a bad thing. Public debate and dissent is part of the wider democratic process, and has the advantage of bringing to the surface issues of concern, and highlights fundamental trade-offs that need to be considered in any change process.

In light of these findings, we suggest that if there is a problem, it is in part in the assumptions that are made about public opposition to renewable energy developments. We suggest that social acceptability would be enhanced by improving the understanding of developers and policy makers of the drivers of social acceptability of REG, and addressing the actual rather than the assumed issues.

## 5.2 What is relevant to NZ from the Create Acceptance study?

One of the drivers of this study was to see whether the ESTEEM tool developed as part of the EU Create Acceptance study might be useful in the New Zealand situation. ESTEEM was developed to enhance social acceptance of new and innovative RE projects in Europe. It is essentially a structured process, facilitated by an independent consultant, to identify stakeholders and work with the project manager, so as to ideally resolve potential issues through negotiation at an early stage in the process.

As discussed above, we consider that the issues surrounding social acceptance in New Zealand are more deep-seated than purely poor consultative practices by project developers. While in some cases consultation may be less than ideal, there are also many examples of good practice. The Ministry for the Environment already strongly encourages and supports good consultation practice through information, guidelines and training courses, and advice on best practice is very similar to ESTEEM.<sup>106</sup> We conclude that it is unnecessary to develop and promote another process, although it would be useful for MfE to review a copy of the ESTEEM tool and possibly place a link to it on their website.

Apart from the ESTEEM work, however, there are other findings of the Create Acceptance study that are useful and relevant. The work programme leading to the Create Acceptance report<sup>107</sup> examined 27 case studies across Europe on energy conservation, biomass, wind, solar, hydrogen, carbon capture and storage, geothermal and salinity power. As a starting point for our concluding comments, it is worth touching on some of the conclusions of that study as, despite its very different context, many of the wider influences on project success are similar.

The Create Acceptance report identifies 'national factors' and 'local factors' that influence the success of new energy projects. Many of these factors are similar to those which have

---

<sup>106</sup> For example, see the MfE sites <http://www.mfe.govt.nz/publications/rma/project-advocate-guide-sep99.html>, <http://www.mfe.govt.nz/publications/rma/guidelines-tangata-whenua-dec03/html/index.htm>, <http://www.qp.org.nz/consents/consultation.php>

<sup>107</sup> Heiskanen et al., 2007

emerged in this study so far in the stakeholder interviews. National influences on success include government policies and socio-economic, cultural and geographic factors (for details see table 6.1, Appendix 2). Local influences are similarly clustered into political, socio-economic, cultural and geographic factors (see table 6.2, Appendix 2).

These tables indicate the very wide range of influences on project success, only a proportion of which can be considered to be purely driven by people's attitudes, but many of which either influence social attitudes (e.g. trust in project partners and institutions, historical experiences) or are influenced by social attitudes (e.g. planning policies, policy culture). It is notable that most of these factors lie outside New Zealand's RMA process. We have used these 'factors influencing new energy projects' to assist in developing recommendations (forwarded under separate cover to EECA). These propose actions to address the key issues we have identified as contributing to a lack of social acceptance.

### **5.3 Achieving greater social acceptability of REG**

Drawing from the study's findings as a whole, we conclude that the public would be more likely to find new REG acceptable if

- They have some level of knowledge and familiarity with the technology
- They consider the development is suitable in relation to the qualities of the site
- The proposal does not have significant impacts on themselves and other tangible and intangible qualities that they value
- They feel that developers have listened to their concerns and dealt with them respectfully and honestly
- They feel trust and good faith in the developer
- The type, scale, and rate of proliferation of the technology is acceptable to the people of that region at that point in time
- They have a stake in the development, or there is another tangible flow of benefits back to the affected individuals and community/ies
- They have some certainty as to likely future constraints on REG developments – that is, that they do not feel obliged to oppose every proposal as a matter of principle in order to prevent proliferation
- They feel that their voices and concerns will be considered credible in the consenting process
- The management and effects of the REG plant over time continue to be seen in a positive light by the public
- They feel that trade-offs are openly and satisfactorily discussed and regularly revisited
- The public and communities feel that they are contributors to the energy transition rather than onlookers

In relation to this last point, a further insight from this study is that the resource consent process only offers a very limited opportunity for the public to have a voice in the renewable energy transition. Under the RMA, effects assessment and mitigation are well-developed, yet some issues are not dealt with in the consenting process. In our interviews, all groups were delighted at the opportunity to talk, and we had a clear sense of a pent-up demand for



a discussion of these wider issues. From our interviews and review of media stories and research literature, we have identified that stakeholders are interested in the following issues, yet they are outside of the limits of RMA hearings, so they rarely get an opportunity to discuss them. We have posited them as questions:

- To what degree should REG play a part in the energy transition, as opposed to energy efficiency?
- Which renewable energy generation types are appropriate for New Zealand or for particular regions?
- What social, environmental and cultural trade-offs are acceptable in the pursuit of more REG?
- What tradeoffs of personal wellbeing or comfort might be involved in not increasing REG capacity?
- Should scale matter? Are there situations where smaller scale developments might be more acceptable and potentially lead to a more widespread acceptance (legacy, cultural norm) of REG?
- To what extent should people and groups affected by a development (apart from land and resource owners) receive some benefit, and what form should that benefit take (pay-off, co-investment opportunity, community ownership, community trust funding etc)?
- Should there be a greater degree of certainty about the parameters of possible REG applications – locations, scales, types etc? If so, how can these policies best be determined?
- How can siting decisions be better informed so that socio-cultural qualities are considered at the time of siting choice?

Currently, there does not appear to be an arena in which the public can discuss these pan-REG issues. The market-led approach to energy developments means that as far as the public is aware, privately-owned energy generation companies and SOEs lead the process, and they can only respond on a case-by-case basis. This leads inevitably to a sense of siege, with groups perceiving themselves to be in David-and Goliath situations, and developers seeing oppositional groups as out to get them. The fundamental questions that underlie this mutual unease are not discussed.

We conclude that there would be huge advantages in enabling the public and communities to be a part of the energy transition rather than onlookers. This would involve engaging the public in discussion and debate on the points listed above, and in the development of policy, as well as being involved in actual REG developments. It would also involve building a legacy of trust and good faith in developers and technologies, and providing a greater level of certainty for communities and developers alike as to the parameters of acceptability. At this relatively early stage of the transition to 90% renewables, establishing a base of socially acceptable REG technologies (i.e. at acceptable sites, of a scale and with other characteristics that communities are comfortable with) could lead to greater levels of societal knowledge, comfort and accustomedness to the notion of REG generally. This approach would involve a shift from defining the situation as a problem (how can we make THEM accept change?) to seeing it as an opportunity to co-create the renewable energy transition.



## REFERENCES

*Note we have only referenced peer-reviewed literature here. For other work referred to, full details are contained in the text or the relevant footnote.*

- Aitken, M. (2010). Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature. *Energy Policy*, 38(4), 1834-1841.
- Aitken, M., McDonald, S., & Strachan, P. (2008). Locating 'power' in wind power planning processes: the (not so) influential role of local objectors. *Journal of Environmental Planning and Management*, 777-799.
- Aitken, M., (2009) Wind Power Planning Controversies and the Construction of 'Expert' and 'Lay' Knowledges. *Science as Culture* 18(1), 47-64.
- Barry, M., & Chapman, R. (2009). Distributed small-scale wind in New Zealand: Advantages, barriers and policy support instruments. *Energy Policy*, 37(9), 3358-3369.
- Bell, D., Gray, T., & Haggett, C. (2005). The 'Social Gap' in Wind Farm Siting Decisions: Explanations and Policy Responses. *Environmental Politics*, 14(4), 460-477.
- Bellaby, P., Eames, M., & Flynn, R. (2010). The role of 'trust' in the transition to sustainable energy. *Energy Policy*, 38(6), 2613-2614.
- Breukers, S., & Wolsink, M. (2007). Wind power implementation in changing institutional landscapes: An international comparison. *Energy Policy*, 35(5), 2737-2750.
- Bruland, K., (1997) Patterns of resistance to new technologies in Scandinavia: an historical perspective. In: M. Bauer, (Ed.), *Resistance to new technology*, Cambridge University Press, Cambridge.
- Devine-Wright, P. (2004). Beyond NIMBYism: towards an integrated framework for understanding public perception of wind energy. *Wind Energy* 8(2): 125-39.
- Devine-Wright, P. (2005). Local Aspects of UK Renewable Energy Development: Exploring Public Beliefs and Policy Implications. *Local Environment* 10(1), 57-69.
- Devine-Wright, P. (2009). Rethinking NIMBYism: The Role of Place Attachment and Place Identity in Explaining Place-protective Action. *Journal of Community & Applied Social Psychology* 19(6), 426-441.
- Devine-Wright, P. (2010) From backyards to places: Public engagement and the emplacement of renewable energy technologies. Chapter 5 in P. Devine-Wright (Ed.) *Public engagement with renewable energy: from Nimby to participation*. Earthscan: London.
- Devine-Wright, P., & Howes, Y. (in press). Disruption to place attachment and the protection of restorative environments: A wind energy case study. *Journal of Environmental Psychology*.
- Dunlap, C. (2009). Regulating Land use Technologies – How does Government Juggle the Risks?. In M. Winter & M. Lobley (Eds) *What is Land for? The Food, Fuel and Climate Change Debate*. P263-290

- Ellis, G., J. Barry, et al. (2007). "Many ways to say 'no', different ways to say 'yes': Applying Q-methodology to understand public acceptance of wind farm proposals." *Journal of Environmental Planning and Management* 50(4), 517-551.
- Ellis, G., Cowell, R., Warren, C., Strachan, P., Szarka, J., Hadwin, R., et al. (2009). Expanding Wind Power: A Problem of Planning, or of Perception? *Planning Theory & Practice*, 10(4), 523-532.
- Fisher, R.M., (2005) Wind energy in New Zealand: regulatory and policy lessons to date, *New Zealand Journal of Environmental Law* 9, 307–333.
- Gottlieb, D. & Matre, M., (1976). Sociological dimensions of the energy crisis: a follow up study. , University of Houston, Energy Institute. Houston, TX (1976).
- Graham, J. B., Stephenson, J. R., & Smith, I. J. (2009). Public perceptions of wind energy developments: Case studies from New Zealand. *Energy Policy*, 37(9), 3348-3357.
- Gross, C. (2007). Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. *Energy Policy*, 35(5), 2727-2736.
- Hadwin, R., (2009). The problems of planning: a developer's perspective, *Planning Theory and Practice* 10 (4) (2009), pp. 532–534.
- Heiskanen, E. et al., (2007). Create Acceptance: Factors influencing the societal acceptance of new energy technologies: Meta-analysis of recent European projects. European Commission Sixth Framework Programme Deliverable 3.1, 3.2 and 4, WP 2 draft report. Energy Research Centre of the Netherlands. <http://www.esteem-tool.eu/fileadmin/esteem-tool/docs/Resourcesreport.pdf>
- Hindmarsh, R. and Matthews, C. (2008) Deliberative speak at the turbine face. *The Journal of Environmental Policy and Planning* 10(3), 217-232.
- Hinshelwood, E., (2009). *Wind engineering* 24(4): 299-306
- Hoffman, M., Lawson, R., Stephenson, J. (2009). Does the 'silent majority' support windfarms? Comparing opinions and motivations of wind farm submitters and non-submitters. Research Report, Departments of Geography and Marketing, University of Otago
- Lee, T., B. Wren, et al. (1989). Public responses to the siting and operation of wind turbines. *Wind Engineering*, 13, 188-95.
- Loring, J.M., (2007). Wind energy planning in England, Wales and Denmark: factors influencing project success. *Energy Policy*, 35(4), 2648–2660.
- Meridian, (2006). Options, choices, decisions: understanding the options for making decisions about New Zealand's energy future: Meridian Energy. Wellington, New Zealand.
- Miner, P., (2009). Wind Farms: More Respectful and Open Debate Needed, Not Less. *Planning Theory & Practice*, 10(4), 535-538.
- Nadaï, A. (2007). "Planning", "siting" and the local acceptance of wind power: Some lessons from the French case. *Energy Policy*, 35(5), 2715-2726.
- Nadaï, A. & Van der Horst, D. (2010) Landscapes of Energies. *Landscape Research* 35(2), 143-

- O'Hare, M. (1977) Not on MY block you don't: facility siting and the strategic importance of compensation, *Public Policy*, 25(4), 407-458.
- Pasqualetti, M. J. (2000). Morality space, and the power of wind-energy landscapes. *Geographical Review* 90(3), 381-394.
- Pasqualetti, M. (2001). Wind Energy Landscapes; Society and Technology in the California Desert. *Society and Natural Resources*, 14, 689-699.
- Pasqualetti, M.J., Gipe, P. & Righter, R.W. (2002). *Wind Power in View. Energy Landscapes in a Crowded World*. Academic Press, San Diego, CA.
- PCE, (2006). *Wind power, people, and place*. Parliamentary Commissioner for the Environment. Wellington, New Zealand.
- Perpryzk, B. & P.R. Hilje 2009. Renewable Energy – Predictions and Reality. Report for the Renewable Energies Agency, Berlin.
- Schaefer, M., (2010) Accelerating the deployment of wind energy in New Zealand: the adaptability of a feed in tariff. Thesis, Masters of Energy Studies 2010 Otago University, Dunedin.
- Selman, P. (2010) Learning to Love the Landscapes of Carbon-Neutrality. *Landscape Research* 35(2), 157-171
- Sovacool, B. K. (2009). Rejecting renewables: The socio-technical impediments to renewable electricity in the United States. *Energy Policy*, 37(11), 4500-4513.
- SECRU, (2000). Public attitudes towards wind farms in Scotland: results of a residents survey. Scottish Executive Central Research Unit, Edinburgh.
- Short, L. (2002) Wind Power and English Landscape Identity. In, M.J. Pasqualetti, P.Gipe & R.W. Righter (eds) *Wind power in view: energy landscapes in a crowded world*. Academic Press, California, p. 43-58
- Stephens, J. C., Rand, G. M., & Melnick, L. L. (2009). Wind Energy in US Media: A Comparative State-Level Analysis of a Critical Climate Change Mitigation Technology. *Environmental Communication: A Journal of Nature and Culture*, 3(2), 168-190.
- Stephenson, J., (2010). People and Place. *Planning Theory and Practice*, 11(1), 1-13.
- Stephenson, J., Ruru, J., & Abbott, M., (eds) (2010). *Beyond the Scene – Landscape and Identity in Aotearoa New Zealand*, Otago University Press, Dunedin, NZ.
- Toke, D. (2005). Explaining wind power planning outcomes, some findings from a study in England and Wales. *Energy Policy* 33(12), 1527–1539.
- Thayer, R.L. & Freeman, C.M. (1987). Altamont: Public Perceptions of a Wind Energy Landscape. *Landscape and Urban Planning*. 14, 379-398.
- Upreti, B.R. & Van der Horst, D. (2004). National renewable energy policy and local opposition in the UK; the failed development of a biomass electricity plant. *Biomass Bioenergy*, 26, 60–69.
- Van der Horst, D. (2007). NIMBY or not? Exploring the relevance of location and the politics of voiced opinions in renewable energy siting controversies. *Energy Policy*, 35(5),

2705-2714.

- Warren, C.R., Lumsden, C., O'Dowd, S., Birnie, R.V. (2005). 'Green On Green': Public perceptions of wind power in Scotland and Ireland. *Journal of environmental planning and management*, 48(6), 853-875.
- Wolsink, M. (1989). Attitudes and expectations about wind turbines and wind farms. *Wind engineering*, 13: 196-206.
- Wolsink, M. (2000). "Wind power and the NIMBY-myth: institutional capacity and the limited significance of public support." *Renewable Energy* 21(1), 49-64.
- Wolsink, M. (2006). Invalid theory impedes our understanding: a critique on the persistence of the language of NIMBY. *Transactions of the Institute of British Geographers*. 31(1), 85-91
- Wolsink, M. (2007). Planning of renewables schemes: Deliberative and fair decision-making on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy*, 35(5), 2692-2704.
- Wolsink, M., (2009). Planning: Problem "Carrier" or Problem "Source"? *Planning Theory & Practice*, 10(4), 539-543.
- Wolsink, M. (2010). Near-shore wind power—Protected seascapes, environmentalists' attitudes, and the technocratic planning perspective. *Land Use Policy*, 27(2), 195-203.
- Wüstenhagen, R., Wolsink, M., & Bürer, M. J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35(5), 2683-2691.

## **APPENDIX 1**

See CD inside back cover for spreadsheet of data on 70 renewable energy projects 2000-2010.

## APPENDIX 2

Table 6.1 *National factors influencing new energy projects*

Factors pertaining to the national context	Examples of relevance for new energy projects
<i>Government policies</i>	
Types of policies on new energy technologies and related topics	Sensitivity and adaptability of policy to needs from stakeholders (investors, scientists, inhabitants, etc.).
National policy culture (consensus, negotiation, confrontation)	Influence of policy culture on societal acceptance of stakeholders before and during project.
Centralization of national government	Autonomy of national and local government to decide upon projects.
Stability of national policy	Investor and stakeholder confidence in projects due to (in)stable policies in the past.
<i>Socio-economic factors</i>	
Availability of natural resources	Stakeholder confidence in feasibility of project due to availability of resources.
Perception of availability natural resources	Stakeholder confidence in feasibility of projects due to perception on the availability of (enough) natural resources essential for project.
Energy prices	Acceptance of project because of good competitive conditions for new energy projects based on existing energy prices (taxes) in country.
Perception of foreign investment	Stakeholder confidence in external project partners influences their acceptance of the whole project.
Importance of energy independence	Usefulness of arguments supporting project visions based on willingness to become energy independent and to insure security of supply
National competing technologies and industries	Existing technologies and industries may form competitive conditions for new energy projects
Employment and regional development policies	Social and economic support available for projects from stakeholders that support development of employability
<i>Cultural factors</i>	
Trust in institutions	Stakeholder confidence and trust in different types of project partners
Tradition of top-down vs. bottom-up initiatives	Project partners' ability to mobilize resources from the top down or from the bottom up.
Environmental awareness	Environmental awareness influences the usefulness of environmental arguments in communicating the project vision
Historical experiences	Historical experiences with certain technologies, stakeholders and projects influences the support for new but comparable technologies, stakeholders and projects.
Attitudes to new technology	Acceptance project based on attitude from stakeholders to innovation or new technology in general.
<i>Geographic factors</i>	
Climate	Natural endowments and demands for energy due to temperature, wind, etc.
Availability of suitable locations	Possibilities and problems encountered in finding good locations for the project

From Heiskanen et al., 2007 (Create Acceptance report) p 84



Table 6.2 *Local factors influencing new energy projects*

Factors pertaining to the local context	Examples of relevance for new energy projects
<i>Political factors</i>	
Power of local government	Influence of decisions of local government on the project.
Policies for urban planning and financial involvement in new energy	Influence of local policies concerning urban planning and financial involvement in new energy on the project.
Impacts on the local environment	Impact of the project on local environment influencing the societal acceptance.
Influence of individual local public figures	Personal influence of public figures on the (acceptance) of the project.
<i>Socio-economic factors</i>	
Availability and perception of natural resources	Stakeholder confidence in feasibility of project due to (perception of) availability of sufficient resources on the location.
Attitude to 'foreign' (non-local) investors	Stakeholder confidence in external (non-local) project partners influences their acceptance of the whole project.
Importance of local energy independence	Usefulness of arguments supporting project visions based on willingness to become locally energy independent and to insure local security of supply.
Interest in employment opportunities and presence of local economic development policies and programmes	Social and economic support available for projects from stakeholders that support development of employability locally.
Availability of local competence and infrastructures	Existence of local competence and infrastructures influences the support of stakeholders for the project.
<i>Cultural factors</i>	
Trust in local institutions	Stakeholders' trust in local project partners and institutions.
Tradition of top-down vs. bottom-up movements	Project partners' ability to mobilize resources locally from the top down or from the bottom up.
Historical experiences	Local experiences with the location/technology/initiator or other aspects of the project.
<i>Geographic factors</i>	
Climate	Natural endowments and demands for energy due to temperature, wind, etc.
Availability of suitable locations	Possibilities and problems encountered in the location of the project.

From Heiskanen et al., 2007 (Create Acceptance report) p. 88

