

**UNDERLYING FACTORS OF OPPOSITION TO AN OFFSHORE WIND FARM
IN LAKE ONTARIO**

Jennifer Taylor

November 29th, 2010

A Major Paper submitted to the Faculty of Environmental Studies in partial fulfillment of
the requirements for the degree of Master in Environmental Studies

York University
Toronto, Ontario, Canada

ABSTRACT

This research paper discusses the factors that have influenced opposition to an offshore wind farm off the Scarborough Bluffs in Lake Ontario. Toronto Hydro Energy Services, a municipally owned utility in Toronto, Canada has installed an anemometer in Lake Ontario to determine the economic feasibility of a large offshore wind farm. Guildwood residents residing in close proximity to the proposed project have expressed concerns, and a public meeting in November 2009 drew over one thousand attendees. Semi-structured interviews of Guildwood residents and Grounded Theory coding analysis were undertaken to extract the values, beliefs and logic that underlie negative attitudes of the Guildwood residents who have mobilized to stop an offshore wind farm from being built. Using the data itself to determine the analytical categories, results from the interviews have been presented as six major themes: The Bluffs are a Special and Unique Place; Industrial Wind Power Does Not Belong in the Lake; Consultation was Inadequate and Offensive; Wind Power's Viability and Benefits are Exaggerated and/or False; Money and Politics Underlie the Push for Wind Power; An Offshore Wind Farm Poses Risks to Human Health, Avian Life and the Local Community and NIMBYism is a Duty. The results indicate that wind energy debate is a new kind of environmental controversy, where both opponents and proponents argue their cases in environmental terms. They also show that there is a dearth of meaningful dialogue between offshore wind proponents and opponents, which limits both parties' understanding of the issues. In addition, the results show that landscape values played an important role in determining respondents' attitudes, even though respondents did not emphasize them for fear of being branded NIMBYs. Although NIMBYism generally connotes selfishness, many respondents in this research opined that it is a natural and logical response to perceived threats to one's health and local environment.

FOREWORD

This Major Research Paper (MRP) explores, in depth, two aspects of my Area of Concentration: renewable energy and public opinion. In general, my Plan of Study (POS) revolves around current efforts to transition Ontario's electricity system from dependence on conventional sources such as nuclear and fossil fuels to greater reliance on renewable energy. Social barriers to achieving this have been the main focus of my graduate studies including socio-political, market and community barriers. Ethics as a driving force of the renewable energy movement is a key area of my POS, particularly how the movement's original social goals of equity, democracy and energy independence, have been affected by the emergence of large-scale, centralized renewable projects propelled by the same corporate power structures that maintain fossil fuel and nuclear dominance. This MRP serves as the final requirement for a Masters in Environmental Studies degree at York University. It looks at community members' opposition to a large, commercial offshore wind project near Toronto. The purpose of such a study is to gain greater insight into what factors underlie the efforts to prevent its development, and steps that can be taken to address them.

ACKNOWLEDGEMENTS

The author would like to thank all those who participated in this research for their time, generosity and candour, Ian Taylor for his meticulous editing and valuable commentary, and Jose Etcheverry for the inspiration to pursue studies and a career in renewable energy.

TABLE OF CONTENTS

	Page
Lists of Tables and Figures	5
Glossary	6
1. Introduction	7
2. Background	10
2.1 The Emerging Offshore Wind Energy Industry	10
2.2 Global Status of Offshore Wind	11
2.3 Offshore Wind in North America	12
2.4 Ontario's Offshore Wind Potential	13
3. Prior Studies of Public Acceptance of Wind Power	15
3.1 Social Acceptance and the Social Gap	15
3.2 Reasons for Opposition in the Literature	17
3.3 Is Opposition of Wind Power a NIMBY Response?	22
4. The Conflict	25
4.1 The Proposal: Anemometer and Wind Farm	25
4.2 The Proponent: Toronto Hydro Energy Services	28
4.3 The Site: Lake Ontario and the Scarborough Bluffs	28
4.4 The Community: Guildwood Village	30
4.5 Prior Survey of Scarborough Residents	31
4.6 The Formation of Save the Toronto Bluffs	32
4.7 Timeline of Events	33
5. Methods of Data Collection	34
6. Results from Interviews	38
6.1 The Bluffs are a Special and Unique Place: Industrial Wind Power Does Not Belong in the Lake	38
6.2 Consultation was Inadequate and Offensive	44
6.3 Wind Power's Viability and Benefits are Exaggerated and/or False	51
6.4 Money and Politics Underlie the Push for Wind Power	57
6.5 An Offshore Wind Farm Poses Risks to Human Health, Avian Life and the Local Community	62
6.6 NIMBYism is a Duty	70
7. Summary of Interview Findings	74
8. What the Results Tell Us	76
9. Conclusion	79
References	81

LIST OF TABLES AND FIGURES

Tables	Page
1. Timeline of Events: From the Formation of Save the Toronto Bluffs to the Installation of the Anemometer	32
2. Summary Chart of Interview Findings	73

Figures	Page
1. Location of the Anemometer and Area for a Potential Offshore Wind Farm in Lake Ontario, from Ajax to the Beaches	25
2. Map of Guildwood Village	29

GLOSSARY

CMOH – Chief Medical Officer of Health
FIT – Feed-In Tariff
GEA – Green Energy and Green Economy Act
GHG – Greenhouse Gases
GTA – Greater Toronto Area
GW – Gigawatt
KWh – Kilowatt-hour
LEK – Local Ecological Knowledge
LULU – Locally Undesirable Land Use
MEI – Ministry of Energy and Infrastructure
MNR – Ministry of Natural Resources
MOE – Ministry of the Environment
MRP – Major Research Paper
MW – Megawatt
NIMBY – Not-In-My-Backyard
NYPA – New York Power Authority
OPA – Ontario Power Authority
POS – Plan of Study
PPA – Power Purchase Agreement
STB – Save The Toronto Bluffs
WCO – Wind Concerns Ontario

1. INTRODUCTION

The case for increasing the world's share of renewable energy is predicated on the pursuit of greater social and environmental justice. Proponents of a widespread transition from reliance on fossil fuel and nuclear power to renewable sources, such as wind, sun and biomass, argue that it will reduce greenhouse gases (GHG), foster greater energy autonomy and bring about a new "green" industrial era. Over the past two decades, the case for renewable energy has gained momentum because of the threat of climate change, conflicts over oil supplies and a global recession. Consequently, several Western European countries, notably Germany, Spain, Denmark and the United Kingdom, have installed a significant amount of renewable capacity, mainly wind power both on land and in the North and Baltic Seas. In addition, numerous nations have adopted aggressive targets and policy mechanisms such as Feed-in Tariffs (FIT) to accelerate the deployment of renewables, and a total of 148 states and the European Union have joined the recently established International Renewable Energy Agency¹.

Ontario has become one of the leading North American jurisdictions in supporting renewable energy development by adopting the *Green Energy and Green Economy Act* (GEA) in May 2009. Key components of the GEA include: an advanced FIT system coupled with 20-year Power Purchase Agreements (PPA); guaranteed and priority access to the provincial electricity grid for renewable energy projects, and; a streamlined approval process (Ministry of Energy and Infrastructure [MEI], 2009). According to provincial polls, the GEA has been well received by the Ontario public, with 87% of respondents across Ontario reportedly in favour of it (Pollara, 2009).

¹ The International Renewable Energy Agency, also known as IRENA, was formally established in Bonn, Germany on January 26th, 2009. Of the 148 states that have signed the Statute of the Agency, 48 are African, 38 European, 35 Asian, 17 North American and 10 Australian/Oceanic. IRENA's mandate is to promote the widespread and increased adoption and sustainable use of all forms of renewable energy.

Yet, the high support for renewable energy demonstrated in surveys and polls can be deceiving, as it has not necessarily translated into high rates of project implementation in numerous jurisdictions. In Ontario, for example, surveys and polls do not reveal that currently 44 citizen groups, from across roughly 27 counties, have formed an advocacy group named Wind Concerns Ontario (WCO) in order to protest against planned wind power projects in their districts (WCO, 2010). Many of the arguments leveled by members of WCO challenge the ability of wind power to bring about the more socially and environmentally just energy future articulated by renewable energy enthusiasts.

In particular, WCO, and similar organizations around the world, emphasize the potential human health risks and adverse environmental impacts posed by large wind turbines. WCO also argues that provisions under the GEA designed to streamline renewable energy projects – shortening the approval timeline; requiring opponents to supply peer-reviewed evidence that contested projects will cause irreparable damage, and; exempting developers from zoning bylaws and Municipal Plans – are undemocratic. Consequently, although wind power is widely touted as a ‘green’ technology in Ontario, it is presently encountering many of the same obstacles as other Locally Undesirable Land Uses (LULUs) such as landfills, incinerators and nuclear power plants.

Toronto Hydro Energy Services’ (hereafter “Toronto Hydro”) plan to erect an anemometer to test the wind resource approximately 2 km off the Scarborough Bluffs in Lake Ontario for a potential offshore wind farm is a current example of an Ontario renewable energy project becoming a “risk conflict issue” from local residents’ point of view. While offshore wind farms have been successfully developed in European waters, they are still in the planning stages along North America’s coastlines and in the bi-national Great Lakes. In response to Toronto Hydro’s proposal, Guildwood residents

concerned with the undertaking have mobilized to stop the path of development by forming an incorporated group called Save the Toronto Bluffs (STB) and advocating for the cancellation of plans to test the wind resource, and by extension, any future plans for an offshore wind project in this location.

Using a Grounded Theory² approach and semi-structured interviews, this MRP aims to uncover the underlying factors of STB members' opposition to the possibility of an offshore wind farm. The purpose of such a study is to develop a better understanding of the root causes of such resistance in an Ontario-specific context. To begin, the author will provide an overview of the nascent offshore wind industry, with particular attention paid to its evolution in North America and Ontario's vast offshore potential. The author will then look to the current literature on wind power and social acceptance to draw out information on the "Social Gap" associated with renewable energy; key reasons for opposition identified in the literature and the Not-in-my-backyard (NIMBY) phenomenon.

Next, the paper will examine and describe all aspects of Toronto Hydro's proposal to install an anemometer off the Scarborough Bluffs in Lake Ontario including: the proponent, Toronto Hydro; the site of the potential anemometer and the Bluffs area; the Guildwood community of Scarborough; prior surveys of Scarborough residents' attitudes towards renewable energy; the formation of STB and a timeline of the events as they unfolded. A description of the methods of data collection employed for this research is then described, followed by the results from the interviews. Subsequent to the results section is a table summarizing the interview findings. Finally, drawing from the key findings, the author discusses what they tell us about renewable energy conflicts, the

² Grounded Theory is a systematic qualitative research methodology in the social sciences that emphasizes the generation of a theory from data in the process of conducting research. It is a method of research that contradicts the traditional model, where the researcher chooses a theoretical framework and applies it to a studies phenomenon. Rather, a Grounded Theory approach is to collect data and from it mark key points with a series of codes that are grouped into similar concepts. From these concepts categories are formed, which are the basis for the creation of a theory, or a reverse engineered hypothesis.

public consultation process, perceived risks from offshore wind deployment, and the importance of landscape values in determining attitudes about offshore wind.

2. BACKGROUND

2.1 The Emerging Offshore Wind Energy Industry

Increasing the share of renewable energy generation is widely accepted as a major component of climate control (Jacobson, 2009; Scheer, 2007; Jacobsson & Lauber, 2006; Sims et al., 2007). In Ontario, electricity usage accounts for 17%, roughly 33.2 megatonnes, of Ontario's total GHG emissions and associated climate change according to the most recent estimates (Environmental Commissioner of Ontario, 2009). Wind power has become the most prolific source of renewable energy throughout the world for several reasons: it is far cheaper on a large scale than solar and tidal power; the technology is relatively mature; it produces no pollution or GHGs, and; it is a very large resource (Kempton, Firestone, Lilley, Rouleau, & Whitaker, 2005). Furthermore, wind power is labour-intensive, mainly due to its extensive operation and maintenance requirements, employing more labour per megawatt (MW) in the form of local-level, long-term jobs than any other power source (Kempton et al., 2005).

Offshore wind is emerging as an increasingly attractive form of wind energy for several reasons. Due to the stronger, denser and more consistent winds over water, coupled with the use of bigger turbines, offshore wind farms yield more electricity generation per square metre of swept rotor area, and may yield up to 50% more electricity than onshore farms of equal capacity (Junginger & Faaij, 2003; International Energy Agency [IEA], 2007). In addition, proponents assert that offshore wind developments can be built in close proximity to coastal cities, simplifying transmission and transportation issues that often plague onshore wind farms located in remote areas

(IEA, 2007). Furthermore, offshore wind farms sufficiently distant from shore tend not to meet with the same degree of public resistance arising from visual impacts, noise production, shadow casting, or removal of land from existing or planned land uses that onshore wind projects typically encounter (Junginger & Faaij, 2003; Pasqualetti, 2004).

2.2 Global Status of Offshore Wind

Until recently, the global offshore wind market had been growing in small increments. Since the first demonstration turbine was installed off Sweden's coast two decades ago, approximately 2.1 gigawatts (GW) of offshore wind power have been added to Europe's electrical grid, compared to ~135 GW of onshore wind power installed within the same time frame (World Wind Energy Association, 2010). Yet, in spite of its slow beginnings, largely due to cost and logistical challenges, the European offshore wind market grew by 28.3% in 2008 and 54% in 2009, exceeding onshore wind market growth for the first time for two years in a row (European Wind Energy Association [EWEA], 2010). Analysts' prediction of continued high growth in the offshore wind sector is predicated on the abundance and size of European offshore wind projects in the pipeline; technological improvements; an increasingly saturated onshore wind market; an increasingly consolidated offshore wind market, and; strong regulatory and financial support from the EU (RWE Innogy, 2009).

Currently, there are over 17 wind farms under construction in Europe, totaling over 3,500 MW. A further 52 wind farms have been fully consented, totaling more than 1,600 MW. Altogether, developers and utilities are in the midst of planning more than 100 GW of European offshore wind capacity (EWEA, 2010). The UK has emerged as the world leader in offshore wind power with an operational capacity of 590.8 MW, or 39% of global market share, and is followed by Denmark (28%), The Netherlands (17%) and

Sweden (9%) (EWEA, 2009). Offshore wind capacity in Belgium, Finland, Germany and Ireland currently accounts for less than 2% of Europe's total (EWEA, 2009).

While its existing capacity is minimal, Germany, along with the UK, is a major centre of growth for offshore wind. Its utilities have the most aggressive expansion plans in Europe with over 10 GW of planned offshore wind capacity in the pipeline between 2009 and 2015 (Emerging Energy Research [EER], 2009). The UK's offshore wind objectives are comparably ambitious as it plans to augment its existing capacity by approximately 8 GW by 2015 through the development of Round 1 and 2 tenders (EER, 2009). The Crown Estate recently announced winning consortia for Round 3 development of 32 GW of offshore wind capacity within 9 zones post 2015 (Petroleum Economist, 2010).

In addition to the 3.7 GW currently under construction, EWEA (2010) predicts EU countries will install an additional 32 GW over the next five years, bringing the European total to approximately 37 GW in 13 countries by 2015. Correspondingly, EER (2009) predicts that offshore wind farms worldwide will generate nearly 45 GW by 2020. As Asia and North America currently look to Europe for technology and cost benchmarking, it is anticipated these two continents will contribute nearly a quarter of the new offshore wind capacity installed globally over the next decade (EER, 2009).

2.3 Offshore Wind in North America

Like Europe, North America's uptake of offshore wind power has been markedly slow. Although there are numerous projects in various stages of the planning process, no Canadian or American jurisdiction has yet built an offshore wind farm. Projects along the Eastern seaboard have been proposed off the coasts of Massachusetts, Delaware, Maine, New Jersey, Rhode Island and Texas (Malone, 2009). Cape Wind's 420 MW project off the Coast of Cape Cod is the first offshore wind farm to have received

regulatory approval from the Department of the Interior and is anticipated to be the first completed in the US (Beniwal, 2010). On the Pacific Coast, the NaiKun Wind Energy Group is planning to install 110 turbines in the Hecate Strait between Prince Rupert and Haida Gwaii. The project, however, was not included in British Columbia's latest Clean Power Call, rendering its future uncertain (Marketwire, 2010).

In the Great Lakes region, Ontario, and the states of New York, Ohio, Michigan and Wisconsin, are busy laying the groundwork for offshore wind development in the near future. On December 1, 2009, the New York Power Authority (NYPA) issued a Request for Proposals to develop utility-scale offshore wind projects in New York State waters of Lake Erie and Lake Ontario, the first U.S. Great Lakes' jurisdiction to do so (NYPA, 2009). In 2008, Cuyahoga County, Ohio commissioned a feasibility study for offshore wind farms in Lake Erie (Heckbert, 2009). The State of Michigan completed a mock-permitting exercise for offshore wind farms in early 2008 and will release guidelines for an offshore wind approvals process in the near future (Heckbert, 2009). Furthermore, Wisconsin is currently undertaking wind analysis along its shorelines, as well as developing its own rules and regulations to guide future developments (Heckbert, 2009).

2.4 Ontario's Offshore Wind Potential

The abundance of Ontario's offshore wind resources is significant. Commissioned by the Ontario Power Authority (OPA), Helimax Energy Inc. published the first comprehensive study of offshore potential on the Ontario side of the Great Lakes in the spring of 2008. Employing available GIS and wind resource information, in combination with a high-level physical and environmental constraints' analysis, the report identified 64 offshore sites with favourable potential and a total generating capacity of 35 GW. In the study, favourable potential constituted water depths between 5 m and 30 m; annual average wind speeds of at least 8 m per second, and; a sufficient available water sheet to

accommodate at least 100 MW of wind power (Helimax, 2008). Helimax's preliminary energy yield calculations of the selected sites were based on a generic 5 MW turbine and an assumed installation capacity density of 5.8 MW/ km² (Helimax, 2008). The calculated net capacity factors for all sites range from 34.7% to 40.8% compared with 31.1% average net capacity factor used to estimate onshore potential in an earlier study (Helimax, 2008).

The Helimax study concluded that the majority of the most promising sites are located in Lake Huron and Lake Erie, with 27 and 25 sites identified, respectively (Helimax, 2008). Nine sites were identified in Lake Ontario and 3 in Lake Superior (Helimax, 2008). It is important to note that a number of critical factors were not evaluated in a preliminary (non site-specific) manner. These include the seabed properties and icing conditions of the Great Lakes, as well as visual impact, economic viability and, especially important in the context of this research, social acceptability (Helimax, 2008).³

Although offshore wind was not included in the supply mix set out in the OPA's *Integrated Power System Plan* released in 2006, the most recent prescription for Ontario's renewable electricity generation, the GEA, has greatly increased the viability of its future development. First, the GEA establishes 'Offshore Wind' as a separate energy development category from onshore wind due to its unique requirements and performance capabilities. Second, it stipulates that offshore wind projects of any size will receive a 19-cent per kilowatt-hour (kWh) FIT coupled with a 20-year PPA. Among other

³ At the time the research for this MRP was conducted, 20,790 MW of offshore wind power had been applied for through the Ontario Ministry of Natural Resources' *Windpower Site Release and Development Programme* (2004). However, it is important to note that since then the Ministry of the Environment has proposed a 5 km setback for all offshore wind projects. Should their proposal become regulation, a number of Ontario offshore wind projects in the pipeline will be canceled, including those with PPAs. To the author's knowledge, as of August 2010 only three proposed projects are located more than 5 km from shore: Trillium Power's 414 MW wind farm off of Main Duck Island in Lake Ontario, Windstream Energy's 300 MW project west of Wolfe Island and Erie Wind's roughly 4,000 MW planned array located in the middle of Lake Erie.

GEA provisions for offshore wind and other renewable energy generation, the most relevant to this research is the requirement that objections to renewable energy projects be based on peer-reviewed scientific studies. Opponents to any wind project, either on or offshore, cannot appeal a project's environmental approval without studies, for which they must bear the cost, that prove a potential development will cause irrevocable and permanent harm.

3. PRIOR STUDIES OF PUBLIC ACCEPTANCE OF WIND POWER

For the purpose of addressing a broad range of literature, studies relating to both onshore and offshore wind have been consulted for this MRP. This broader focus is justified because studies pertaining to public acceptance of offshore wind exclusively are scarce at present.

3.1 Social Acceptance and the 'Social Gap'

Social acceptance has been found to be a powerful barrier to the achievement of wind energy targets (Wüstenhagen, Wolsink & Burer, 2007; Warren, Lumsden, O'Dowd & Birnie, 2005; Kempton et al., 2005; Bell, Gray & Hagget, 2005; Nadai, 2007; Righter, 2002). According to Wüstenhagen et al. (2007), social acceptance can be conceptualized as consisting of three main components: socio-political, market and community acceptance. Socio-political acceptance of wind energy is social acceptance on the most general level, including acceptance of technologies and policies by the public, key stakeholders and policy makers. Market acceptance refers to the process of market adoption of wind energy, including support of consumers, investors and large energy firms. Lastly, community acceptance refers to the specific acceptance of siting decisions and planning rules around renewable energy projects by local stakeholders,

particularly residents and local authorities (Wolsink, 2007; Nadai, 2007; Jobert, Laborgne & Mimler, 2007).

According to the literature, throughout the onset of renewable technology implementation in the 1980s and 1990s, community acceptance was largely neglected due to a high level of socio-political support for renewable energy (Wüstenhagen et al., 2007; Kempton et al., 2005; Righter, 2002). Many wind industry experts did not anticipate opposition to wind power as they assumed the macro-environmental benefits were so compelling that local objections would be dismissed as parochial and self-serving (Kempton et al., 2005). Furthermore, most developers, including energy companies, authorities and private local investors, believed the implementation of wind projects would be obstacle-free as the first surveys of social acceptance indicated overwhelmingly high support for the technology (Wüstenhagen et al., 2007).

A fundamental question permeating the literature on renewable energy and social acceptance is how can there be strong local opposition to wind farms when there is a high level of support for wind energy in general? Put another way, why are attitudes towards wind power fundamentally different from attitudes about wind farms? (Gross, 2008; Devine-Wright, 2005; Wolsink, 2000; Wolsink, 2007). Dubbed the 'social gap', the high level of public support for wind energy expressed in opinion surveys, but low success rates achieved in planning applications, has long characterized the industry (Bell et al., 2005). The social gap should not be confused with the 'individual gap', which exists when an individual person has a positive attitude to renewable power in general but actively opposes a particular development (Bell et al., 2005).

In the UK, for example, approximately 80% of the public is in favour of wind energy but only a quarter of contracted wind power is actually commissioned (Bell et al., 2005; Short, 2002). While the Netherlands' official policy target for 1985-2000 was 1000 MW of

wind energy, only 400 MW were realized due to institutional factors including community acceptance (Wolsink, 2007). The crucial point, therefore, is that general positive attitudes towards wind power do not automatically result in concrete support for particular projects (Wolsink, 2000).

Bell et al. (2005) sum up three explanations for the social gap identified in the literature. The first explanation describes the gap as a product of a 'democratic deficit.' Although a majority of the public favours wind power according to opinion polls, a minority that opposes it ultimately influences development decisions (Bell et al., 2005; Toke, 2002). In other words, wind energy outcomes do not reflect the will of the majority. The second explanation is that the non-fulfillment of certain developments points to a general principle of qualified support for wind power. This means that people who support wind power do not do so unconditionally and believe that there are limits and controls that must be factored into its development, including qualifications regarding impacts on landscape, wildlife and human health among others (Bell et al., 2005). The third explanation, which is the most controversial and widely debated, is that the social gap is a product of people supporting wind energy in general but actively opposing developments in their own area for self-interested reasons, commonly referred to as the NIMBY explanation (Bell et al., 2005; Wolsink, 2000; Haggett, 2003).

3.2 Reasons for Opposition in the Literature

The literature presents a range of factors underlying attitudes to wind power. According to a large number of studies, landscape values play the most significant role in community-based opposition to wind projects (Pasqualetti, 2001; Pasqualetti, 2004; Wolsink, 2000; Wolsink, 2007; Landenburg, 2009; Van der Horst, 2007; Hoppe-Klipper & Steinhauser, 2002; Short, 2002; Schwahn, 2002; Firestone & Kempton, 2007). Hoppe-Klipper and Steinhauser (2002, p.86) write that the most commonly cited reason for the

rejection of new wind power proposals is a perceived “reduction in the value of existing landscapes”. Correspondingly, Wolsink (2000) argues that the aesthetic value of wind turbines, in terms of their perceived impact on scenery and visual intrusion on the landscape, is the best predictor of local attitudes and the dominant factor in explaining opposition or support. Pasqualetti (2001), Wustenhagen (2007) and Coleby, Miller and Aspinall (2009) argue that this is due to wind power’s inherent spatial characteristics; it is expansive, obvious, and elicits resistance that is immediate and instinctive. Furthermore, wind development intrinsically invites conflicts with existing landscapes and uses because it is necessarily site specific, rendering it difficult to find generic solutions (Pasqualetti, 2004). In looking at issues of place and preservation, Schwahn (2002) concludes that the rapid changes to the landscape brought about by wind farms made local residents feel “expelled from their homeland”. Furthermore, Pasqualetti (2002) looked at expectations of landscape permanence with respect to opposition to wind power development in the San Geronio Pass in California. The study found that its conversion into an industrial landscape violated expectations that it would remain unchanged.

In their study on public attitudes and wind turbine development, Coleby et al. (2009) found that respondents’ personal perception of land use change due to wind power development nearby was significant relative to ‘living place’. In other words, urban respondents were more accepting of wind power than rural ones. According to Woods (2003), opposition to wind farms in rural landscapes can be attributed to the wider trend of rural change. Woods (2003) argues that in the new rural economy culture and lifestyle take precedence over the physical exploitation of the land in the commodification of rural landscapes. Investment in rural areas through counter-urbanization and gentrification, often in pursuit of the ‘rural idyll,’ result in urban country dwellers acting to protect their

financial and emotional investment by opposing developments and activities that threaten the 'rurality' of their new home.

Wolsink (2007, p.2692) writes that the type of landscape "fully overshadows other attitudinal attributes, as well as visual and scenic factors such as the design of wind turbines and wind farms, and the number and the size of turbines". Correspondingly, Van der Horst (2007) claims that people who derive a more positive sense of identity from particular rural landscapes are likely to resist potential developments such as wind farm, especially if they also live there. This is consistent with the work of Short (2002) that recognizes the importance of place-identity in siting controversies and that the wind industry fails to grasp the important links among landscape, memory and beauty. On the other hand, residents of stigmatized places, such as those that host heavy industries, for example, are more likely to welcome facilities that are relatively 'green' such as wind energy as an improvement to the area. This is consistent with the literature on polluted and stigmatized places where effectiveness in reversing the status quo is low by Burningham and Thrush (2004) and Phillimore and Moffatt (2004).

While a great deal of the literature is dedicated to exploring the links between landscape values and opposition to wind projects, other researchers have focused on opposition driven by negative attitudes towards the developer, local decision makers and the decision-making process (Krohn & Damborg, 1999; Gross, 2007). Bosley and Bosley (1988) were among the first researchers to introduce this idea with regards to (what was then) a nascent wind industry in California. They concluded that because the industry was guided by small, independent producers without PR staff, it failed to address concerns and lack of knowledge about wind power on the part of local communities and environmental groups, which resulted in their mobilizing to defeat wind projects.

Gross (2007) focuses on links between conflicts around wind power projects and issues of procedural justice, which is defined as the processes by which decisions are made, including rights of participation, access to information and lack of bias on the part of decision-makers. According to Gross (2007), justice is accepted as a central component in a well-functioning society, therefore, decisions concerning the siting of wind developments have the potential to damage a community's well-being and cause protests which damage relationships and divide communities if an outcome is perceived as being unfair. This is especially pronounced when decisions are made that benefit some sections of the community at the perceived expense of others.

The issue of benefits to communities that host wind farms has been found to play a significant role in public acceptance of wind power and is related to the social gap described in the previous section (Gross, 2007; Jobert et al., 2007; Devlin, 2002; Kempton & Firestone, 2007). Both policy makers and researchers present wind power as a solution to environmental problems, particularly climate change. Thus, any adverse local impacts caused by a wind project are set against the global benefits of wind power, which has broad social acceptance (Wolsink 2007). The wind energy debate, therefore, represents a new kind of environmental controversy where both proponents and opponents frame their arguments in environmental terms, with proponents of wind power prioritizing global concerns and opponents prioritizing local ones (Warren et al., 2005; Pasqualetti, 2004). Brittan (2002) and Wolsink (2007) argue that presenting decisions in a global frame is not in line with the frame that is applicable from a local perspective and explains why more concrete benefits, such as financial ones, have been found to be more effective in fostering local acceptance of wind projects. Similarly, Devlin (2002) found that opportunities to participate in the ownership of a wind farm, or to rent land to a developer, reduced concerns about the project and increased local participation.

In a comparative study of local acceptance of wind power in France and Germany, Jobert et al. (2007) found that the stronger the policy framework for implementing renewable energy, such as that in Germany where wind power projects are defined as 'privileged', the less developers have to win over local communities, and the more likely they were to neglect taking local interests and concerns into account, resulting in a loss of trust. Conversely, where policy frameworks are weaker, such as in France, developers are more dependent on community acceptance and were found to engage in greater efforts towards conflict resolution and networking among local actors increased. Indeed, poor communication between developers, politicians, and local bureaucracies and the local community has been found to be a significant catalyst for converting local skepticism and negative attitudes into action against certain projects (Krohn & Damborg, 1999).

The perception of risks associated with wind farms play a large role in people's attitudes towards them. The potential for wind farms to threaten human health and the environment tends to be the mainstay of many opponents' arguments to prevent them from being built. In a study of the underlying factors of public opinion towards a proposed offshore wind project in Cape Cod, Massachusetts, Firestone and Kempton (2007) found that the most frequently mentioned factor underlying opposition to the project was perceived damage to marine life and other adverse environmental impacts, followed by electricity rates, aesthetics and impacts on fishing and boating. However, when these expectations were compared to the findings of the project's Environmental Impact Statement, many of the beliefs were found to be baseless. As well, when contextualized, Firestone and Kempton (2007) contended that the project's impacts would be much less damaging to the marine environment than many of the existing commercial practices, like trawling, that were widely considered acceptable.

Prior experience of wind farms has also been found to influence perceptions of risk and attitudes in general to a significant degree. Warren et al. (2005) found that residents in close proximity to a proposed wind farm were far more negative about it than those residing close to an existing one because the local experience of a wind farm eliminates fear associated with risks stemming from the unknown. Results from a study by Ladenburg (2009) show that people with prior experience of offshore wind projects far from shore have a significantly more positive view of them than people who had not experienced them, or who had experienced them close to shore. Thus, prior experience of offshore wind influences individual assessment of visual impacts. While Ladenburg's findings demonstrate the significance of prior experience, they also show that the proximity of turbines to a community has a strong influence on its reaction to them. A study conducted in Texas by Swofford and Slattery (2010), for example, found that while a majority of respondents supported wind energy, those living closest to wind farms indicated the lowest levels of support and those living farthest away indicated much higher levels. Wolsink (2007) supports this contention but adds that the nature, strength and spatial scale of this effect may vary according to local context and value of the land.

3.3 Is Opposition to Wind Power a NIMBY Response?

One of the most commonly referred to explanations for the 'social gap' described in Section 3.1 is the NIMBY phenomenon. Yet, in spite of its ubiquitous application, the theory itself is often poorly explained. Wolsink (1994) was one of the first authors to identify the lack of a consistent definition as a key obstacle in assessing NIMBY in development conflicts. Indeed, many studies have striven to define NIMBY in numerous ways. Simpson and Weiner (2003) define it as "an attitude ascribed to persons who object to the siting of something they regard as detrimental or hazardous in their own neighbourhood while by implication raising no such objections to similar developments

elsewhere.” Dear (1992, p.341) writes that NIMBY “refers to the protectionist attitudes of and oppositional tactics adopted by community groups facing an unwelcome development in their neighbourhood”. Lober and Green (1994) contend that the NIMBY argument stems from a host community’s perception of an imbalance between the benefits they will receive and the costs they will bear from a proposed facility. Krohn and Damborg (1999, p.957) assert that NIMBY related to wind power could be used to describe people who “support wind energy on an abstract level but object to specific local projects because of the expected consequences primarily concerning noise and visual impact”. Van der Horst (2007, p.2705) defines NIMBY as “...the phenomenon that certain services are in principle considered as beneficial by the majority of the population, but that proposed facilities to provide these services are in practice often strongly opposed by local residents. Finally, Brion (1991) sums up NIMBYs as people, generally viewed as bad citizens, who put their own private interests ahead of the interests of wider society.

Wolsink (2000) describes NIMBY as a specific social dilemma in which a public good (in this case wind power) is not produced within a society even though all individuals in that society desire it to be so. The inadvertent and flawed outcome of this dilemma is attributed to individuals’ ‘free rider’ behaviour. According to NIMBY-logic, local residents oppose wind projects in order to maximize their own individual utility (Wolsink, 2000). Thus local opposition is perceived as the result of selfish motives that impede the attainment of clean energy targets, a societal goal (Wolsink, 2000). Much of this perception stems from the fact that proponents of the NIMBY argument do not distinguish between opponents’ interests and their motives, and tend to disregard opponents’ perceptions of risk (Wolsink, 2000).

The pervasiveness of the NIMBY syndrome in conflicts over wind power is a subject of wide debate in the literature (Wolsink, 2000; Wolsink, 2007; Krohn & Damborg, 1999; Kempton et al., 2005; Gross, 2007; van der Horst, 2007; Swofford & Slattery, 2010). According to a number of researchers, is not by itself a valid explanation. Burningham (2000, p.55), for example, argues that NIMBY is largely “a succinct way of discrediting project opponents”. Similarly, Kempton et al. (2005) write that even though NIMBY can be used as a neutral descriptor, it is almost universally used as a pejorative term denoting selfishness. As a consequence, the fear of being branded a NIMBY is likely to distort the responses of many research respondents (van der Horst, 2007).

Kempton et al. (2005) also object to the term NIMBY on the grounds that the implied attribution of self-interest constitutes neither evidence nor an explanation for what causes opposition. They cite three factors suggested by Vittes, Pollock and Lillie (1993) that affect people’s values and beliefs about controversial decisions and that should be examined when a situation has been labeled NIMBY: 1) the core cultural values that people bring to an issue; 2) the manner in which an issue is presented to the public through significant opinion leaders in the community and in the media, and; 3) the ways in which people make preferred connections between their core values and the resulting issue positions.

A study conducted by Wolsink (2000) concluded that the significance of the NIMBY syndrome is limited because only a quarter of respondents related the costs and benefits of a project to their own individual utility. Furthermore, Wolsink (2000) argued that for this remaining one-quarter subset of the population to be classified as NIMBY, they would have needed to be in favour of wind power elsewhere, which the data demonstrated few were. While some empirical studies (e.g. Ek, 2005; Warren et al., 2005) set out to measure NIMBY effects without regard for the stage of the project, it is widely agreed

that NIMBY has a temporal dimension. For instance, opposition has been found to be strongest at the planning phase and weaker before a local project is proposed (i.e. when people are asked about the need for renewable energy), or after the facility has become operational (Wolsink, 1994; van der Horst, 2007).

Finally, one of the central components of NIMBY is spatial, namely the notion of 'backyard', which is generally used to imply some geographic area for selfish behaviour (Swofford & Slattery, 2010; van der Horst, 2007). Since under the NIMBY explanation one is willing to support wind energy unless it is in his or her backyard, one would expect that the issue of proximity to be a key predictor of NIMBY attitudes. However, results from studies that have incorporated the traditional 'proximity hypothesis' – the closer residents are to an unwanted facility, the more likely they are to oppose it – are mixed. As discussed in the previous section, some studies support it (Swofford & Slattery, 2010; Dear, 1992; McGowan, Sauter & Brighton, 2005), while several others do not (Johansson & Laike, 2007; Krohn & Damborg, 1999, Warren et al, 2005). Some of the findings that contest the 'proximity hypothesis' include: no differences in intention to oppose a wind project between three groups living at varying proximities from it; those living closest to wind farms not displaying the most negative attitudes, and; those living closest to wind farms holding the most favorable attitudes.

4. THE CONFLICT

4.1 The Proposal: Anemometer and Wind Farm

Toronto Hydro has secured access to a series of lake-bed grid cells in Lake Ontario, running approximately 25 km in length, about 2 to 4 km offshore southeast of the Scarborough Bluffs, through the Ministry of Natural Resources *Windpower Site Release and Development Programme (2004)* (Toronto Hydro Energy Services [THES], 2010).

Toronto Hydro began construction of a wind research platform approximately 1.8 km offshore to measure the wind resource and assess the economic feasibility of an offshore wind project in November 2009 (THES, 2010). Construction of the platform was suspended in mid-December of 2009 and resumed, consistent with the Land Use Permit Minor Amendment received from the Ontario Ministry of Natural Resources (MNR), on April 29, 2010 (THES, 2009). According to Toronto Hydro's website, the structural steel platform has been constructed in roughly 15 m of water and extends approximately 4 m above lake water level with a width of approximately 5 m. The platform holds the anemometer instrument, auxiliary power system and communication and navigation beacons. Toronto Hydro plans to test the resource over a two-year period. Figure 1 below shows the location of the anemometer and the area for a potential offshore wind farm in Lake Ontario, running from Ajax to the Beaches.

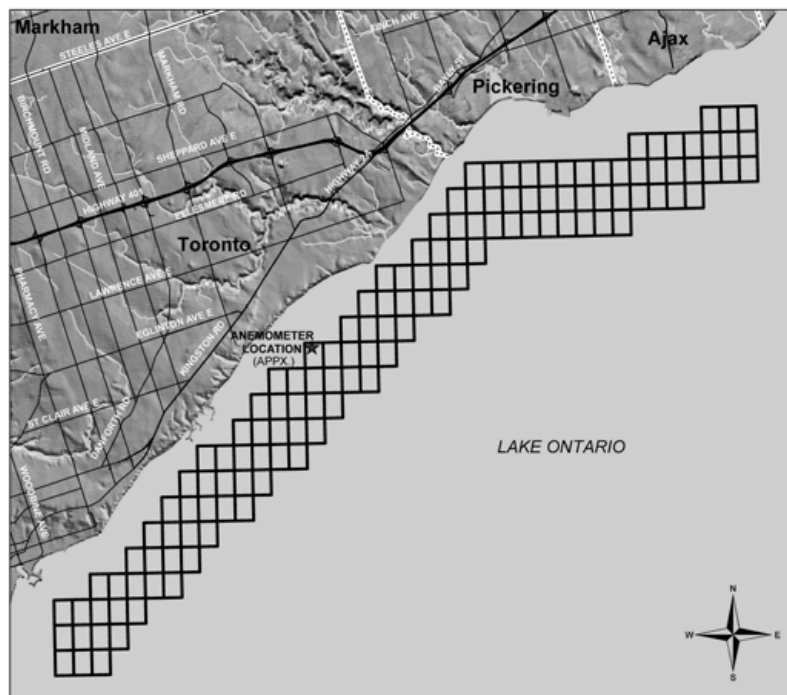


Figure 1. Location of the Anemometer and Area for a Potential Offshore Wind Farm in Lake Ontario, from Ajax to the Beaches. (Source: Toronto Hydro Energy Services)

All beds of navigable waters belong to the Crown according to the *Beds of Navigable Waters Act (1990)* (Lake Ontario Waterkeeper [LOW], 2009). Consequently, Toronto Hydro required a “disposition” of the land from the Crown before anything could be constructed in the lake (LOW, 2009). The disposition was subject to a Category B Class Environmental Assessment by the MNR (LOW, 2009). The MNR assigned this proposal to a Category B project evaluation and consultation and it was carried out in accordance with the Class Environmental Assessment (EA) process for MNR Resource Stewardship and Facility Development Projects. No significant adverse environmental effects were identified (LOW, 2009). The EA process was comprised of 5 steps: Scoping, Public Notice, Project Evaluation, Notice of Completion, and Statement of Project Implementation. The Notice of Commencement to install the anemometer was announced in newspaper advertisements and letters to politicians, boating clubs, First Nations groups, and environmental groups on August 12 and 13, 2008. Toronto Hydro received final approval from the MNR on November 9, 2009, roughly five months later than was originally anticipated.

Throughout the consultation process, Toronto Hydro was explicit in its contention that its proposal to install an anemometer would not necessarily result in a wind farm. In a briefing document for stakeholders on its website, Toronto Hydro states “it is too early to determine whether the location granted to us by the MNR has sufficient wind energy to develop a wind farm” (THES, 2009). Nonetheless, in the same document it lists the potential benefits of a large-scale wind farm, including the number of expected jobs it would create as well as tonnes of CO₂ savings it would result in annually. Furthermore, in a presentation to the community in November 2009, Toronto Hydro representatives talked extensively on the global status of offshore wind, its benefits, and Ontario’s vast potential.

4.2 The Proponent: Toronto Hydro Energy Services

Toronto Hydro Corporation operates two wholly owned affiliates, Toronto Hydro Energy Services (the anemometer proponent) and Toronto Hydro-Electric System Ltd. The City of Toronto is the sole shareholder of Toronto Hydro Corporation. Toronto Hydro-Electric System Ltd., an electricity distribution company, is a regulated monopoly that holds 88% of the Corporation's assets and accounts for 97% of gross revenue (Toronto Hydro Corporation [THC], 2009). With 18.5% of electricity consumers in Ontario as clients in 2008, it served 688,000 residential and commercial customers across the Greater Toronto Area (GTA) (THC, 2009).

Toronto Hydro Energy Services provides expertise to commercial and industrial customers throughout the GTA in energy efficiency, energy management, energy conservation and renewable generation (THC, 2009). It also manages the street lighting and expressway lighting assets within the City of Toronto. Toronto Hydro Energy Services and Toronto Hydro-Electric System Ltd. have a combined workforce of over 1,400 people, with revenues totaling \$2.39 billion in 2007 (THC, 2009).

The proposed anemometer is not Toronto Hydro's first foray into wind power. In partnership with the WindShare Co-operative, Toronto Hydro erected a 660 kW wind turbine at Exhibition Place in Toronto in December 2002. The turbine, which is the first urban-based commercial scale turbine in North America, has been generating power since December 2003.

4.3 The Site: Lake Ontario and the Scarborough Bluffs

Lake Ontario is Canada's seventh largest lake. While it is the smallest of the five Great Lakes, with a surface area of 18,960 km², it has the highest ratio of watershed to lake surface area (Hebert, 2007). Its northern and western shorelines comprise the Greater Golden Horseshoe, a densely populated and industrialized region, including the major

industrial centres of Toronto and Hamilton, as well as a number of smaller port cities including St. Catharines, Oshawa, Cobourg, and Kingston near the St. Lawrence River inlet. Close to 9 million people, or over a quarter of Canada's population, live within the watershed of Lake Ontario (Hebert, 2007). The lake's southern shore borders on the Niagara Peninsula in Ontario, as well as rural New York State.

Lake Ontario is relatively deep, with an average depth of 86 m and a maximum depth of 244 m, second only to Lake Superior (Herbert, 2007). Approximately 80 percent of the water flowing into Lake Ontario comes from Lake Erie through the Niagara River. Fish species in the lake include bullhead, yellow perch, eel, white perch, lake whitefish, sunfish and carp (Herbert, 2007). Since Lake Ontario is the Great Lake furthest downstream, it is impacted by human activities occurring throughout the Lake Superior, Michigan, Huron, and Erie basins. Consequently, over the years its ecosystem has become significantly impacted by eutrophication and toxic contaminants such as PCB and DDT (Herbert, 2007).

The Scarborough Bluffs is a 14-km long escarpment and Ontario Heritage Site that runs from the foot of Victoria Park Avenue east to the mouth of Highland Creek in the Scarborough district of Toronto (Lake Ontario Ports [LOP], 2009). Named after the limestone cliffs of Scarborough, England by Elizabeth Simcoe, the wife of the first lieutenant governor of Upper Canada, the highest point of the Scarborough Bluffs is 65 metres (210 ft) (LOP, 2009). According to LOP (2009), the escarpment forms the old shoreline of Lake Iroquois, which was created after the last ice age. The eroded alluvial deposits from the Scarborough Bluffs then settled westward to form the Toronto Islands. Bluffer's park, created from fill, has been built below the Cliffside. Natural beaches extend east and west of the park allowing visitors to walk under the Bluffs.

4.4 The Community: Guildwood Village

The community of Guildwood, commonly referred to as “Guildwood Village”, is located in the Scarborough-Guildwood federal and provincial electoral district that has been represented in the Canadian House of Commons since 2004 (City of Toronto, 2006). It is situated on the North shore of Lake Ontario atop the Scarborough Bluffs, south of Kingston Road, from Grey Abbey Trail in the east to the end of Sylvan Avenue in the west. With a population of 10,270, Guildwood has a much higher percentage of seniors than comparable jurisdictions, representing 24% of the total population (City of Toronto, 2006). It also has lower populations of youth and very young children and a slightly higher percentage of immigrants (City of Toronto, 2006). It is the wealthiest area of Scarborough with 37.3% of families in the highest income bracket of \$100,000 and over (City of Toronto, 2006). Figure 2 below provides an aerial depiction of Guildwood Village.

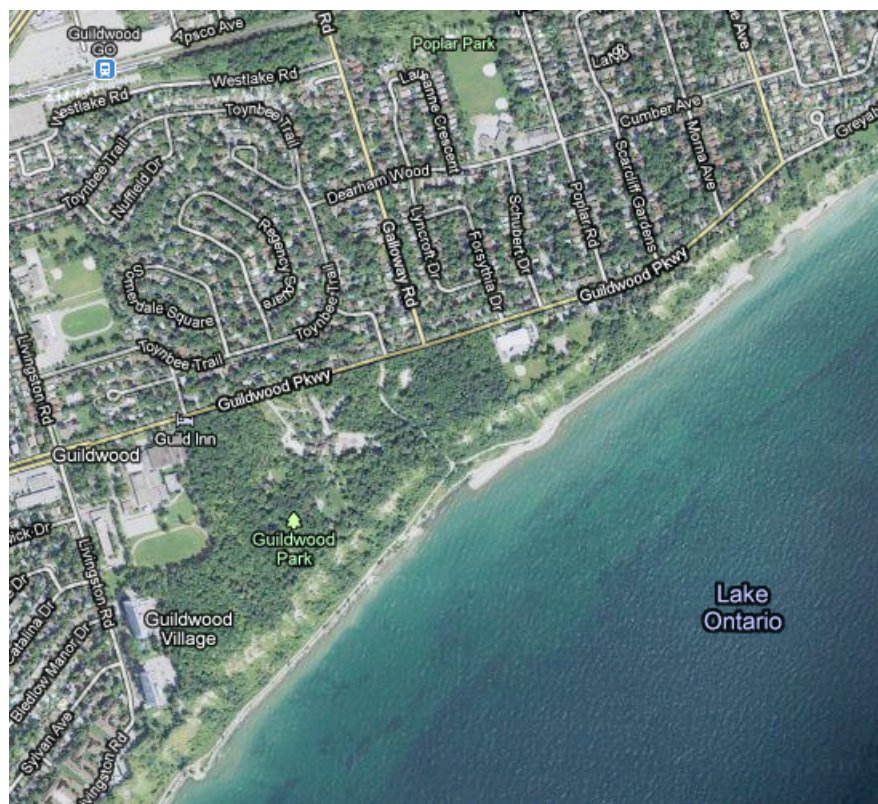


Figure 2. Map of Guildwood Village (Source: Google Earth)

4.5 Prior Survey of Scarborough Residents

A poll of Scarborough residents conducted by Pollara (2009) in April 2009, and commissioned by Environmental Defence, a Canadian environmental organization, found that 9 in 10 residents agreed with the increased use of solar, hydro, wind and conservation programs. More than two-thirds (68%) of respondents were aware of the Ontario government's plan to adopt the GEA, although half reported they were familiar with the Act and only 5% claimed to be very familiar with it. Poll results also showed that 92% of Scarborough residents supported the GEA after being read a short description. Of the 92%, six-in-ten indicated strong support. Support was also found to be relatively consistent throughout Scarborough, ranging from 90% to 94% in three regions. According to the poll, reasons offered for supporting the GEA were widespread, with the most common being its benefit to the environment (30%). Many also pointed to long-term goals and benefits, such as the need to conserve energy (11%); to look out for future generations (10%); to make Ontario energy self-sufficient (4%) and to diversify the province's energy supply (4%).

With respect to Toronto Hydro's proposal to test the wind resource off the Scarborough Bluffs, half of all respondents were familiar with the plan, and 14% considered themselves very familiar. According to the poll, proximity to the Bluffs led to increased familiarity with the proposal. In all, 62% of residents south of the CNR tracks (widely considered the upper-most boundary of the Guildwood community) were familiar with it. One-in-five (21%) south of the tracks described themselves as very familiar. Upon being informed of Toronto Hydro's plans, 79% of respondents said they supported them, while 13% described themselves as opposed. Among the strongly opinionated, 51% said they strongly supported it while 9% strongly opposed it. Support remained high on the waterfront, with three-quarters (76%) of Respondent south of the CNR tracks

supporting the project, including 53% who strongly support it. At the same time, strong opposition to the proposal was also concentrated in that region, with 17% of residents strongly opposed. One-in-ten (11%) of GEA supporters stated they were opposed to Toronto Hydro's proposal.

4.6 The Formation of Save the Toronto Bluffs

Upon seeing Toronto Hydro's Notice of Commencement to install an anemometer in close proximity to the Scarborough Bluffs in a local paper, a Guildwood resident (who is also a respondent in this research) went door to door advising neighbours of the possibility of an offshore wind farm. The resident also mailed 500 letters to other residents outlining reasons why the Scarborough Bluffs is an inappropriate location for such a project. Over the next few months, a group of the most actively concerned residents came together to form STB, an incorporated entity and member of WCO. Its stated mission on its website is three-fold:

- To conserve and protect Toronto's eastern beaches and the Scarborough Bluffs from unnecessary "desecration";
- To enlighten the general public of the pros and cons of industrial size wind turbines;
- To unravel the politics behind the industrialization of Toronto's waterfront.

STB's website lists their primary concerns about an offshore wind project off the Scarborough Bluffs in the following order:

- It will not be economic, providing very little electricity at very high rates;
- It will have the potential to cause environmental damage, including harm to the lake bed, avian and aquatic life, and wildlife along the shores of the lake;
- It will threaten the unique and fragile Bluffs that line the shore;
- It will industrialize a beautiful recreational area;
- It will negatively impact the daily lives of thousands of Torontonians due to construction effects, noise, flashing lights and potential health hazards.

4.7 A Timeline of Events

Table 1 below provides a timeline of the events that have occurred from the formation of STB to the installation of the anemometer.

Table 1. Timeline of Events: From the Formation of Save the Toronto Bluffs to the Installation of the Anemometer

Date	Event
Aug.12-13, 2008	THES publishes a Notice of Commencement for the installation of an anemometer in Lake Ontario in the <i>Scarborough Mirror</i> and <i>Toronto Star</i> .
Aug.-Sept., 2008	A Guildwood resident goes door-to-door in the Bluffs area to inform neighbours about the proposal and distributes approximately 500 “dear neighbour” letters regarding concerns about it.
Sept. 12, 2008	Deadline for comment submission on the proposed anemometer.
Oct. 27, 2008	THES attempts to hold its first public meeting at Christ Church on Markham Rd. in Scarborough. The meeting is canceled due to the inadequate size of the venue. THES announces to the estimated 400 attendees that it will be rescheduled.
Nov. 23, 2008	THES holds the rescheduled public meeting at Sir Wilfred Laurier Collegiate on Guildwood Parkway in Scarborough. Over one thousand people are estimated to attend. Many in the Guildwood community express anger at the “pro-wind” attendees who are bussed in to Scarborough by the Toronto Environmental Alliance.
Jan.2, 2009	In response to dissatisfaction on the part of Guildwood residents with respect to the public meeting, THES sends a notice to community members regarding a ‘community members only’ meeting. Many only receive it January 13 th , two days before the deadline for computer registration, the only communicated means of attending.
Jan. 20, 2009	Toronto Hydro hosts its “third” public meeting. STB estimates that approximately 700 people attend.
Jan. 29, 2009	THES releases its Project Evaluation Report for the anemometer.
Feb. 10, 2009	Ontario Premier Dalton McGuinty publicly declares “NIMBYism won’t prevail in Ontario.”
Apr. 2009	STB submits 300 pages of evidence as to why the MNR should not approve anemometer, Ministry of Environment takes almost 4 months to review Bump Up request.
May 14, 2009	Bill 150, the <i>Green Energy and Green Economy Act</i> becomes law in the Ontario legislature
Aug. 21, 2009	Ministry of Environment denies the 6 Part II orders (bump up requests)

	for individual assessment of the anemometer.
Oct. 23, 2009	THES receives final approval from the MNR to build an anemometer.
Nov. 8-14, 2009	Construction equipment including jack-up barge, drill, crane, tug and support vessels are mobilized in the project area.
Nov. 22-28, 2009	Diving operations and drilling of rock anchors begins.
Nov. 29-Dec. 5, 2009	The base template for the platform is installed approximately 1.2 km south of East Point Park.
Dec. 6-12, 2009	High waves stemming from winter storm conditions halt construction. Jack-up barge and related equipment is towed back to shore.
Dec. 14-18, 2009	Construction of the anemometer is suspended until March 2010 and resumes at the end of April 2010.

5. METHODS OF DATA COLLECTION

This research takes an exploratory approach to identify themes and factors that were influential in forming the beliefs and attitudes of residents of Guildwood regarding a potential offshore wind project off the Scarborough Bluffs. These themes and issues have been examined from each respondent's perspective using a semi-structured interview approach.⁴ The rationale for the use of semi-structured interviews lies in their effectiveness for gathering opinions, particularly when looking for the range of ideas or

⁴ A semi-structured interview is a technique used to collect qualitative data by setting up a situation (the interview) that allows a respondent the time and scope to talk about their opinions on a particular subject. The focus of the interview (a framework of themes to be explored) is decided by the researcher in advance, however, the interview is also flexible and allows for new questions to arise as a result of what the interviewee says. The interviewer uses open-ended questions, the wording of which may not necessarily be the same for all respondents. By contrast, a structured interview employs a formalized, limited set of questions, which are not deviated from. Like any research method, the semi-structured interview has both strengths and weaknesses. It is an efficient and practical way of gathering data about things that cannot be easily observed and allows for respondents to speak in detail and at length about an issue. It also allows the interviewer to probe areas suggested by the respondents' answers, which may not have occurred to the interviewer. It also precludes pre-judgment on the part of the researcher, which is necessary when employing the Grounded Theory method (Cresswell, 2007). On the other hand, the success of the semi-structured interview approach is heavily dependent on the skills of the interviewer who may give unconscious signals/cues that guide respondents' answers. Furthermore, samples tend to be small and the depth of qualitative information may be difficult to analyze. In addition, the interviewer has little way of knowing how honest the respondent is during the interview. While the respondent may not consciously lie, he or she may not have perfect recall of events (Cresswell, 2007).

feelings that people have about something such as an offshore wind project (Lindlof & Taylor, 2002; Cresswell, 2007).

Eight individuals who identified themselves as active members of STB were interviewed for on average 1.5 hours each. Prior to the interviews, the researcher fulfilled all the requirements of the York University Faculty of Environmental Studies *Ethics Review Process for Research Involving Human Participants*. This included obtaining a signed Informed Consent Form from all research participants, which: explained the purpose and benefits of the research; ensured them of the voluntary nature of their participation; ensured them of their right not to answer questions and to withdraw from the study at any time, and; ensured that their identities and all the information supplied would be held in confidence. This research was formally reviewed and approved by the FES Research Committee on behalf of York University and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

Interviews were conducted between July 8th and August 27th, 2009 in Guildwood, Scarborough at respondents' residences. Respondents were selected through a Key Respondent who is a publicly vocal opponent of the project and has spearheaded efforts in the media to have it stopped. The researcher drafted an open letter to potential respondents, all assumed to be members of STB describing the research and what involvement would entail, which was circulated to existing members of STB. Respondents in this research were those (including the Key Respondent) who contacted the researcher and agreed to participate. This approach to recruiting respondents is referred to as snowball sampling or respondent-driven sampling where existing study subjects recruit future subjects from among their acquaintances (Salganik & Heckathorn, 2004). This sampling method was employed because of the difficulty of locating this specific population. Individual members of STB are not identified on their website and

snowball sampling was a cost-effective means of acquiring respondents. Snowball sampling, however, is inexact and can produce varied and inaccurate results, as it is highly reliant on the individual conducting the actual sampling. There is also a lack of definite knowledge as to whether or not the sample is an accurate reading of the target population (Salganik & Heckathorn, 2004).

Interviews used a semi-structured protocol in which questions took forms such as “What is your opinion about this?” and “Why?” eliciting descriptions and long answers rather than single words or sentences. Question order and follow-up questions were based in part on the respondents’ original answers. Topics covered in all the interviews included: why the respondent became a member of STB; whether they were opposed to wind power at the proposed site, some sites, or in general; what information or experience led to their personal stance on the project; whether they considered wind power an important source of energy; the significance of the Scarborough Bluffs to them and the community; what were the benefits and risks of the project; what environmental, social and economic impacts it would have; their opinion of Toronto Hydro and community consultation efforts; how decisions around offshore wind projects should be made, and; whether they felt capable of affecting the outcome of this project.

Interviews were audio taped and transcribed verbatim. All respondents were asked for permission prior to the start of the interview with regards to the taping, and informed that the interviews would be transcribed verbatim. The transcripts were then read through and analyzed to gather all relative concepts and themes, using the data itself to determine the analytical categories. An informal coding process was employed to extract key points and themes, which were then grouped into similar concepts in order to make them easier to analyze. From these concepts, categories were formed, which are the

basis for the creation of a theory with regards to the underlying factors of the issue this research seeks to investigate.

This methodology is closely based on the method of Grounded Theory, specifically the approach developed by Glaser and Strauss (1967) whereby theory is derived from data that is systematically gathered and analyzed through the research process. Rather than a researcher beginning a project with a pre-conceived theory in mind, a researcher begins with an area of study and allows the theory to emerge from the data, which is also referred to as a reverse engineered hypothesis (Allan, 2003; Strauss & Corbin, 1998). The primary objective of Grounded Theory, therefore, is to expand upon an explanation of a phenomenon by identifying key elements of that phenomenon and categorizing the relationships of those elements to the context and process of the experiment (Strauss & Corbin, 1998). The rationale for using Grounded Theory stems from the assumption that theory derived from data is more likely to resemble 'reality' than is theory derived by putting together a series of concepts based on an experience or solely through speculation (Strauss & Corbin, 1998). The goal is to offer insight, enhance understanding and provide a meaningful guide to action (Strauss & Corbin, 1998).

With respect to this research, it is important to note that the wind power literature cited earlier was studied and considered prior to the analysis of the interviews, and helped to guide the interview protocol and data analysis methodology to some extent. These interviewing and analysis methods have been used in the study of the values, beliefs and logic underlying other environmental debates (e.g. Kempton et al. 2005). In terms of the data analysis presented in the following sections, prior experience and knowledge have served to sensitize the researcher to the problems and issues at hand, and have guided the emergence of concepts from the data. The researcher has approached the analysis of the data without the guidance of a preconceived theory in a

way consistent with Grounded Theory methodology. The major concepts identified in this research paper have each been presented in Section 6. Quotations have been presented verbatim, each identified with a code of a letter and a number (“G” for Guildwood and respondent number), ensuring that the identities of all research respondents remain anonymous.

6. RESULTS FROM INTERVIEWS

This section discusses the findings from the interviews. It is organized by topics raised by the respondents, members of STB, and lays out the issues as they see them. The purpose of this section is to reveal the content of their opposition to the project. Unless noted otherwise, points described here were made by more than one person, even if just a single illustrative quotation is used to make the point.

6.1. The Bluffs are a Special and Unique Place: Industrial Wind Power Does Not Belong in the Lake

The issue of an offshore wind farm’s visual impact was not raised by any respondents, save one, without prompting from the interviewer in the form of questions such as “Is the view important to you?” and “What is the significance of the Scarborough Bluffs?” The fact that respondents tended not to raise the issue themselves, however, did not prevent landscape values from emerging as a key factor in their reasons for opposing the project, particularly their perception, also documented by Hoppe-Klipper and Steinhauser (2002), that an offshore wind farm would significantly reduce the value of the Bluffs as a special and unique place. In response to the questions above, respondents spoke at length about the beauty, importance and distinctiveness of the area, describing it as “ecologically balanced”; “of natural heritage significance”; “one of the last remaining undeveloped areas along Toronto’s shoreline” and “worth preserving”. These descriptors revealed that they derived an extremely positive sense of identity from the area in which

they lived and supported what research by van der Horst (2007) and others has shown – that the type of landscape is a key factor as to whether a wind project will be welcome or not:

There's not much noise here, and it is so quiet that a dog can bark three miles away and you'll hear it. And there's [*sic*] so many trees and fresh air...this is the way people should live...If you're an environmentalist, you cannot go through here and not say wow! (G2)

Referring to the significance of the Bluffs themselves:

It's the identity of Scarborough...If you look at the Scarborough civic centre, it's shaped like the cliffs, if you look at the flag of Scarborough, cliffs and water and a maple leaf. So, Scarborough's called Scarborough because of the cliffs...It's those 14 km or so that are key to the understanding of the community. (G1)

Many respondents stressed that the importance of the area to wildlife, with one participant taking time to show the interviewer photos of foxes and deer that frequented his property:

It's ecologically safe for wildlife. Every morning I see the foxes go by and so on. Last year, every day, the deer would go by right here and go round the house...so you have a community that's green. (G2)

When stressing the value of Guildwood in terms of green space, beauty and wildlife, respondents stressed its importance, not just to residents who live in the area, but to the GTA as well:

It's not a NIMBY or a backyard thing; it's about preserving something integral, not just to our community but to Toronto. (G8)

Similarly:

We called it save the Toronto Bluffs on purpose because this is an issue for all of Toronto and beyond. (G7)

In stressing Guildwood's importance as a green space, G5 described the difference between the lack of natural spaces and wildlife in Toronto and the abundance of nature Guildwood:

Toronto's downtown area has been over-industrialized with condos, there's hardly any access for the general public, so here, the Scarborough Bluffs, not only is it a beautiful, geologically interesting heritage site, but it has a history to it...it's a unique geological feature...What we have is sandy beaches, natural trails, sailing clubs, and recreational facilities right along here that anybody can use...Why deny the 4 million people in Toronto for the sake of a few people getting rich on this? It's like giving away the city for the benefits of a few people? (G5)

While Guildwood is a suburban and not a rural area, similarities to what Woods (2003) describes as the pursuit of the rural "idyll" permeated many of the discussions around Guildwood as a special place. When describing the rurality of their neighbourhood, some respondents compared Guildwood to cottage country:

A lot of people use this waterfront as their cottage. When I say it's their cottage, it's their cottage-home all in one...that's how a lot of the waterfront people view their properties...the Bluffs are a quiet, peaceful oasis in a lot of hubbub. (G6)

Similarly:

It's so isolated and there's [*sic*] the Bluffs and there's the lake and it's psychologically relaxing...I don't need a cottage or anything else. (G2)

While the belief that the area is special and valuable in terms of its unique landscape features and natural beauty was unanimous, discussions around the importance of the actual visual impact of an offshore wind farm as a key motivator for opposing it elicited some of the most diverging opinions noted in this research. G3 was one of the few respondents who described the view as "very important", indicating that it was "the reason we chose to live here." G3 elaborated on this response with a personal explanation:

I lived in a big city for so long and it smelled and it was dirty and it was gray. So we started looking for a property on the water because it is mentally healthy to be able to view horizons...I've had breast cancer twice and used this view for rest and recovery. My neighbour is on daily kidney dialysis, so they moved here for the same reasons...this is a place where we can connect.

What G3 describes above is an example of what Short (2002) described as important links between landscape, memory and beauty. In this case, the memory of recovering from breast cancer is directly linked with the view of the lake from her dwelling. Thus the beauty of the view elicits a sense of wellbeing and protection. When asked what ramifications an offshore wind project would have on the aesthetic value of the area, G3 said:

If it were approved, [the project] would have a negative impact on this community because we would lose the connection we have with the water.

Unlike G3, some respondents asserted that the view was not important to them, nor did they believe it was important to others opposing the project:

Initially a few people said “Oh the view!” I was thinking to myself, “screw you,” I mean I don’t care, I mean okay the view, but when we looked at the business case for this, it was completely ridiculous. (G2)

When G2 was asked, in response to the remarks above, if the visual impact of an offshore wind farm only played a minor role in the formation of STB, G2 responded:

Absolutely, yeah. Not only for me, if I were to speak for all the other people we’ve met through this, the thousands of people that have supported us, I’d say the same thing.

Similarly:

There is a great vista from up there but I don’t know that that’s a main thrust. I mean I think there’s [*sic*] people who would prefer not to have that quote unquote “spoiled”...But I don’t think it’s a huge motivator. (G1)

In discussions around the landscape values, the prospect of installing around 60 offshore turbines in Lake Ontario was often characterized as “industrialization” by nearly all the respondents in this research. When asked what constituted industrial wind power in their opinion, respondents gave a range of answers that included “large turbines,” “large projects,” and “projects built by big companies.” Many comments about the industrialization of the lake through wind power were in line with what Pasqualetti (2002)

concluded - that such a prospect violated expectations that the landscape would remain unchanged:

The environment is being industrialized, these are wind factories...it's not like you can go out and enjoy a nice evening, you're always going to be looking at an industrial site as opposed to a beautiful natural landscape." (G5)

Why are you gonna [*sic*] industrialize one of the last remaining sections? Especially when it's in close proximity to the city, that you know it's a little oasis. It's kind of like taking High Park and putting condos in it. (G6)

When asked whether he thought Lake Ontario was not presently industrialized, G6 responded:

Oh no, it's industrialized, it's just this is a section of the lake that is not industrialized. They [wind turbines] definitely would irrevocably change the character of the area. There's no question about it. (G6)

Thus, respondents argued that because this particular area was not industrialized, it ought to be exempt from any intrusions that would irrevocably change it, and as a result, people's relationships with it:

You have to talk about the aesthetics of the lake; these are very spiritually meaningful things that we attach ourselves to in life. (G7)

You've got these ugly things, diminishing the view, diminishing the beauty, diminishing the peacefulness of the area (G4)

I'm just fundamentally opposed to stuff going into a freshwater lake. I think that's part of our post-industrial awareness not to industrialize these kinds of resources. (G3)

To some degree the comments above echo sentiments revealed by respondents in Kempton et al.'s (2005) research on public acceptance of Cape Wind's proposed offshore wind farm in Nantucket Sound, Massachusetts. In their study of both opponents and supporters of the project, it was found that, among other factors, opposition was driven by the belief that humans did not have a right to make permanent intrusions in the sea because their concern for it went deeper than concerns for their quality of life.

While some respondents associated a potential industrial wind farm with negative effects on the visual qualities of the area and the benefits derived from them, others dismissed or downplayed their salience as a basis for opposing a potential offshore wind project, arguing against industrialization from a more pragmatic standpoint, largely revolving around health and safety concerns stemming from building a large infrastructure project in freshwater:

Lake Ontario has sediments that are heavily contaminated from past activity in Niagara. The Niagara gorge is so powerful that the actual current ends up in fact here in the Scarborough Bluffs. We've known this for years... So all these toxins are buried in the sediment, ok? So you're gonna [*sic*] go out there and you're gonna [*sic*] anchor 60 turbines, man you are gonna [*sic*] create a problem for our water supply. And then the cable collects all of that energy and comes on land, now you're looking at a major disturbance of our water, this fresh water. It's not the ocean you know. (G2)

In the same vein as G2, some respondents expressed far less reservation about wind turbines in ocean environments, identifying them as “safe” and “safer”:

On the Great Lakes I'm very concerned about offshore wind because I don't think it's nearly as environmentally sound as it may be in the ocean where certain human health impacts are almost nonexistent and marine and aquatic life impacts have been addressed. (G1)

Summary: Although respondents tended not to raise the issue of the effect of an offshore wind farm on the landscape themselves, they demonstrated a keen appreciation for, and a positive sense of identity from, the natural beauty and peacefulness of the area in which they lived. Guildwood's perceived importance as a wildlife area and one of the last remaining intact stretches of the GTA shoreline were among its most valuable aspects according to respondents, indicating that the type of landscape was a key factor in their negative view of an offshore wind farm. Respondents were also clear in their conviction that an industrial-scale offshore wind farm would irrevocably change the area for the worse. Many also viewed the area as a refuge from the city, much the same as one would describe a cottage in a rural area. While respondents were divided on the

importance of the visual impact an offshore farm would have on the view of the lake, all agreed, for one reason or another, that industrializing the lake was wrong and should not be permitted to happen.

6.2. Consultation Was Inadequate and Offensive

The experience of respondents at the community consultations hosted by Toronto Hydro, and their negative opinion of representatives' responses to attendees' questions and concerns, emerged as a significant main trigger for opposition. As part of the Class B environmental assessment process, Toronto Hydro was required to consult with the 'affected' public to learn of their concerns and address them accordingly. As described in Section 4.7, the consultation process took place on three separate occasions. According to respondents' frustrated and sometimes angry accounts, the process was indicative of what Shepherd and Bowler (1997) describe as citizen involvement reduced to a procedural exercise, instead of a substantive process that included the public in decision-making.

Numerous respondents identified the timing of Toronto Hydro's publication of the Notice of Commencement to install the anemometer as an example of Toronto Hydro's dishonesty and non-transparency in dealing with the community. They decried the fact that its installation, and by extension plans for an offshore wind farm, had been in place for several years but had not been communicated to them until a few months before the anemometer's scheduled deployment:

We found out through the Freedom of Information Act that Toronto Hydro, since '02 or '03, five or more years, has been developing and working on this plan, totally, you know, without letting us know. And we're not only the ones that are paying for it but it's also in our backyard so it's a double insult...Why aren't we the first to know about this? (G5)

Similarly:

Toronto Hydro leased that lakebed years before they disclosed any plans for it. It was like 2005 they leased it. Um, they didn't come to us until 2008, so those could've been 3 really good years of a working committee, discussing things like distance from shore, raising our questions and then doing studies...So when it came time it would have sort of calmed everything. And now it's kind of one of these things where even if we're wrong, I don't know how willing people would be to let go. (G1)

What respondents describe above exemplifies the influence of two key dimensions and concepts related to wind power policy on local acceptance – 'planning' and 'siting'. One could argue, based on the definitions of planning and siting put forth by Nadai (2007) in Section 3, that siting, by means of open consultation, participation and the use of technologies for representing and sharing the spatial and social meaning of locality, never took place. Rather, as indicated by respondents, this project was 'planned' by Toronto Hydro many years in advance as part of a larger renewable energy planning strategy developed by MEI and implemented through the GEA.

As previously discussed, one of the GEA's most controversial provisions, under Schedule K, has been the exemption of renewable energy projects from the Planning Act, meaning that municipal zoning bylaws and official plans do not apply to renewable energy undertakings (Ministry of Municipal Affairs and Housing, 2010). Decisions regarding the siting of offshore turbines in Ontario, therefore, are made exclusively between developers and the province, and to a minor extent federal authorities, even if they technically infringe on lakebed area within a municipality. The rationale behind this aspect of the GEA is likely predicated on research on wind power planning outcomes in other jurisdictions, such as that by Toke (2005), that shows how high levels of apprehension among people living in the immediate vicinity of proposed sites have led to municipal-level decisions to refuse planning permission to developers.

Although articles discussing the GEA and democracy appear on the STB website and others such as WCO's, no respondents identified this issue specifically in the

interviews. When asked about their opinion of the consultation process, respondents tended to condemn it in broader terms:

Is the process correct? I think the process is an absolute sham. I think it does nothing to address the real issues and real concerns that should be a part of rigorous review of what are the cause and effects of the outcomes and outputs of this technology, of any technology. (G8)

If you look at the Ministry guidelines they are following the process. It's not their fault is it, that it's Ministry guidelines? There's no venue for us inside the process, nothing! If you look at letters Hydro sent to so-called stakeholders, which of course didn't include us... They have charts ok, this is a group we contacted, this is the concern expressed and then there's another column, how was it mitigated. And the mitigation might be there is not yet a plan [to build a wind project], this about an anemometer, not about wind turbines. That's their so-called mitigation. (G3)

So they hold a public meeting, it [the regulation] doesn't say you have to listen to the public, or alter your plan, or involve them, it says you have a public meeting. So then the Ministry says, oh you did that, and they check off that box. So that's how it's done. (G2)

As the comments above show, respondents demonstrated acute feelings of powerlessness with respect to having their concerns influence the process and its outcome. Yet, while process-related issues were indeed raised, the interviews revealed a greater preoccupation with the behaviour of the developer itself and what they perceived as blatant examples of its dishonesty and avoidance of issues of concern:

I think the developers have been quite unscrupulous in terms of their approach and I think the talking heads that we hear at Toronto Hydro aren't answering questions because somebody told them, "that's a trigger point, don't be getting into those questions because they'll getcha" [sic]. You know, so somebody's schooling them on what issues to avoid... There was an agenda there. (G8)

And:

[A Toronto Hydro representative] actually stood up in one of the meetings and said she had met with all the yacht clubs in Toronto and they're all on side. And I thought gee that's strange that the yacht clubs don't care. I talked to the Commodore, on of the yacht clubs, they were just beserk when I passed that comment on. She [yacht club employee] said there was a presentation in a Commodore's meeting, a very general presentation on wind power, and she was setting out to get all the Commodores to get back to Joyce and say none

of us agree with this. It was just more of the stuff coming out of Hydro that was outright *lies* from a public corporation. (G3)

Many respondents believed that Toronto Hydro intentionally limited much of the discussion at the public meetings to the anemometer in order to avoid more contentious issues associated with an offshore wind farm. Indeed all of the respondents regarded the installation of the anemometer and the possibility of an offshore wind farm as one in the same:

And of course they always reverted to, it's about the anemometer, and we kept saying, please don't insult our intelligence, if you're going to be testing, you're going to be putting up turbine and we get the feeling you don't even care what the test results are 'cause you won't share any of that with us. (G7)

They're trying to separate testing the wind from a wind farm. Well you can't separate a finger from a hand. They're testing the wind for a wind farm...Why are you putting a research station out there if you don't want a wind farm? (G5)

Not only did respondents consider that Toronto Hydro had behaved evasively and dishonestly towards the community but believed them to have actively tried to suppress dissent against the project by purposely “stacking” the second public meeting on November 23rd (the first having been canceled) with special interest groups in favour of wind power. All 8 respondents recounted the attendance of a large faction of wind power supporters arriving in buses organized by the Toronto Atmospheric Fund, Environmental Defence and the Ontario Sustainable Energy Association. Respondents expressed feelings of injustice at the perceived aggressiveness of those from “outside the community” and “from Toronto,” also described as “special interest groups,” who were mostly students and members of Toronto-based environmental groups using the meeting as a platform to express support for wind power:

I wasn't angry, I went for information, I wanted to know more about it, what was the project? What would it look like, where would it be? The first thing that really offended me was the bussing in of young, idealistic people...who had a plan and swarmed the microphones and went up and gave the motherhood

statements about clean energy, which is fine, one would have been enough. We all had legitimate questions. We all had a huge number of questions. We didn't get a chance to ask any of them...I went in good faith and wasn't treated well. (G3)

I was astonished when they packed the school with all these buses of people and the aisles got filled up with questions from special interest groups who, by the way, if you get into the bottom of it, are funded in some way or another by the producers of the [wind] power equipment or whatnot...the whole tone of it was absolutely hostile...we couldn't get up and ask our question until 11 o'clock. (G8)

The issue of who was a legitimate attendee was a prevalent source of tension at the November 23rd meeting. Frequently when someone at the microphone identified themselves as a student or member of an environmental group, their comments would be interrupted by cries of "Where are you from?" and "What's your address?" insinuating that people from outside the community had no business advocating for a project they would not live in close proximity to. G6 echoed this sentiment:

The [meeting] that did go ahead of course, they bussed people in that don't live in the area. These people were really organized and they knew about these public meetings so they stood up near the line and had the mics covered you know. It was very unfair really since they're not going to be affected by it anyway. (G6)

The issue of fairness in terms of the distribution of burdens and benefits of the project was only explicitly raised by G6, but part of the reason other respondents demonstrated a frustration with the presence of outsiders at the meeting was predicated on the same sense of unfairness. In the development of wind projects on land there is often a disproportionate division of burdens and benefits because some members of a community receive direct benefits in the form of lucrative leasing contracts while their neighbours, who are equally impacted by the presence of the turbines, do not. This situation has been found to have damaged relationships and divided communities (Gross 2007).

In this case, as in other cases concerning offshore wind development, the community is united rather than divided by the belief that they will shoulder a disproportional share of the burdens and risks associated with such a development.

When asked what impact the potential project has had on the community, G2 replied:

I think it's positive, yeah it's brought the community together for sure ... But not together in a nice, warm, let's have a party kind of way you know, but just sort of getting to know each other, the talent of your neighbours it's [sic] fascinating, amazing talent that's just sitting there you know, that otherwise you would never know.

Frustration with respect to having their questions answered was not limited to the November 23rd meeting. Responding to the community's intense dissatisfaction with its outcome, Toronto Hydro organized a third meeting on January 20th strictly for residents of Scarborough. When asked about their experience at the January 20th meeting, all respondents, again, demonstrated a high level of dissatisfaction with what they deemed was a poorly organized effort largely due to registration complications and, what they considered as, Toronto Hydro's inability and unwillingness to answer questions:

No one knew about it, it wasn't in the papers...half the people in the community didn't know about it because [Toronto Hydro] didn't have a proper way of mailing out these invitations and then they made it really hard, like I'm not a computer guy, you registered over computer...we were given a deadline to pre-register, but the deadline was the day a lot of people got their notice. (G5)

By this time I had compiled a list of 130 questions. And we had, as a group, divided the questions up so that everybody had a question to ask. We didn't get a chance to ask most of them. Some were rejected because they were about wind turbines not about the anemometer, others were dismissed or rejected...It again was another exercise in control and denial. (G3)

They [answers to questions] were platitudes, very insulting and if you call that a dialogue, I believe somewhere in the legislation it says meaningful dialogue, I remember reading that, now I didn't see that happening at all. (G7)

Other respondents expressed the conviction that if the community had been involved to a greater extent, and their questions had been well answered, the situation would not

have devolved as quickly or irrevocably. While none indicated that their current stance towards the potential wind farm would be different, some indicated that relations between the two parties would have been better:

I think if the whole process got started out as a two-sided process rather than a large enterprise deciding they're going to do something and doing a whole bunch of work and figuring out how to ram it down the throats of people...it wouldn't have changed our opinions but there would be open discussion about all the things that are now...you know, like they're over here and we're over here and there is no discussion at all. (G4)

Projects of this nature should physically involve the community in the decision-making and the planning and they might find, surprisingly, that a lot of these projects would go ahead much faster and better than if they to manipulate us and treat us like idiots. (G2)

These comments corroborate the findings of Nadai (2007) that top-down rather than participative approaches to planning have been found to have a negative effect on the goals of renewable energy developers. Furthermore, they also corroborate empirical research by Gross (2007) that procedural justice principles of appropriate participation including: the ability of voice to be heard; adequate information; respect, and; unbiased decision-making were considered important to respondents.

Summary: Toronto Hydro's community consultations for the installation of the anemometer not only failed to effectively address respondents' concerns about a potential offshore wind farm project, but they triggered intense feelings of resentment and frustration towards the developer and the consultation process itself. Respondents' perception that Toronto Hydro performed their consultation duties inadequately and did not answer questions because they did not have to under the current scope of the process reflects Jobert et al.'s (2007) conclusion that developers are more likely to neglect taking local interests and concerns into account under stronger renewable energy policy regimes, resulting in a loss of trust.

The extent to which provisions under the GEA to advance renewable energy projects have attributed to the opposition in this case is beyond the scope of this paper. However, findings in this section confirm that respondents felt distinctly alienated from any of the decision-making associated with the location of the anemometer (and by extension the project) and believed that Toronto Hydro had acted towards them with disdain by not answering their questions, and hostility by “stacking” the meeting with pro-wind supporters.

6.3. Wind Power’s Viability and Benefits are Exaggerated and/or False

Most respondents claimed to have had a positive view of wind power and renewable energy prior to becoming aware of Toronto Hydro’s proposal. Some even claimed to have supported the idea of an offshore wind project until learning more about it. All respondents asserted that they had actively begun researching wind power since having learned of the proposed anemometer, and many indicated that their research findings had eroded their initial support and triggered their decision to actively oppose it:

I don’t think we were opposed at all to begin with, I think like most people. When we moved here we actually talked idly, about the possibility of having a wind turbine on our property...so we were interested until we started reading about it. (G3)

I had a positive attitude about wind farms and because I walk my dog I see the Pickering nuclear plant turbine... and that always made me feel good. Until I started doing my research and then I realized that this thing isn’t producing any energy...It’s making people feel good which is the good part of it but in actual fact it’s producing nothing. (G5)

Fundamentally we knew very, very little at the start. I had seen pictures of wind turbines, I’d seen them in California...but the more we learned we realized the questions about wind power, that it wasn’t just the thing turns around and it solves the earth’s problems, one being the fluctuations, and two being health hazards, three, birds, and you know, just more and more and more questions. (G4)

The comments above indicate that respondents would likely have been counted among supporters of increasing Ontario’s renewable energy capacity through the GEA had they

not been confronted with the installation of the anemometer, and thus the possibility of an offshore wind farm in their neighbourhood. Respondents' prior support for wind power, and subsequent negative reaction to the idea of a wind farm in their vicinity, is evidence of the social gap as described by Bell et al. (2005), Devine-Wright (2005) and others.

Unlike negative attitudes towards LULUs like landfills and coal plants, commonly shared by people who live near and nowhere near them alike, respondents in this research 'discovered' reasons to oppose wind power through independent research and information sharing:

Before Save the Toronto Bluffs even existed, it was just a few people in the neighbourhood chatting. And it went from there. I said, "do you know this about them?" And someone would say "well I found out this" and before you knew there was a whole conglomeration of information that is [*sic*] the negatives of wind power. (G6)

When asked why the majority of the public, when polled, support renewable energy, respondents pointed to the same reasons why they had initially supported it:

Generally they do because they are uninformed. However, when they're informed, they don't support it...I must admit I'm against wind farms because I've done so much research now. It's a scheme, a money making scheme that governments and the public go along with because it's green...We're all locked up in this fairytale, it would be nice if it [wind power] worked, we would all love it.

Similarly:

If it's going to be a dirty industry like nukes or whatever, let's talk about that. But it's being presented as something else, which is very deceiving to the public and many people, like myself initially thought, oh that's great, it's green, it's renewable. (G7)

These comments above reveal respondents' belief that the general public supports wind power because it makes them feel good, and it makes them feel good only because they don't know very much about it. The use of words like "deceiving" and "scheme" convey a view of the public as being purposely misled about wind power's ability to bring a better

environmental future. In their view, therefore, wind power's ability to deliver this is merely, as one participant put it, "a fairytale", and not a reality.

The discussions above concerning respondents' initial thoughts on wind power generally followed the question of how they got involved with STB. In most interviews, this question was followed by the inquiry as to whether they believed wind power was an important source of energy, and whether it should be in the future. While most respondents responded in the negative to both questions, all qualified their answers to some degree. The term "important" was left to their own interpretation:

I think it's one element of the energy picture but it's not terribly important... With all the reading and whatnot I've done, where wind power will really come into play is on an individual's home or farm or small business, combine it with solar and create onsite storage of that power that's generated and use it from the storage supply when you need it. (G6)

Well that's easy, no. Oh...I should say yes and no. Yes, on a small-scale, I think it's great...it's free energy and it's good for small-scale wind farms that can, you know almost personal-sized like farms that can actually store energy in a series of batteries. That's darn good. Industrial scale the answer is no, absolutely no. (G5)

Not in its current format. Like in the current format the dangers are too large. I think wind, if it's going to be viable has to be economical because right now it's a 4 to 1 subsidy and it can harm people. If we can get rid of those two things, I think that's a challenge I would put to the wind industry. Clean up wind. And then come back to us and see what happens. (G8)

In most cases, the principal qualifier for the answer to whether wind power was important was the belief that while it was dangerous, expensive and inefficient on a large scale, but a good source of energy a small one, with one respondent saying, "there's absolutely smaller applications I wouldn't mind having here." The support for small, "personal-sized" wind applications opposed to large industrial ones indicates the importance of scale with respect to both the size of the turbines and

the size of the project in discussions about the pros and cons of wind power in this case.

The quotes above demonstrate respondents' belief that wind power is benign on a small scale in terms of its threat to human health and also in terms of its reliability (ability to be stored in batteries). By supporting small, residential applications, they also demonstrate support for renewable energy but the belief that decisions around its deployment are better left to individuals rather than public policy. Wind power, in their opinion, should be a choice rather than top-down decision imposed on the public:

I think that's what bothers me personally the most, is that people are being told that wind is a necessary part of the energy mix, it has to be in the mix, the solar and the wind. (G7)

Why do respondents believe large wind power applications should not be a part of the mix? When posed this question, several respondents said that they thought the wind industry, and Toronto Hydro in particular, had greatly exaggerated wind power's performance potential:

What we really started to take exception to were the overblown statements by Hydro and proponents of wind energy that weren't even close to being accurate...All we're hearing is the good stuff from Hydro that wind generators can produce enough energy to power 100,000 homes or whatever the heck it is. Then we found out that's only when the wind is blowing at whatever velocity...they only run 20% at best, 22%, 23% [capacity] in Europe...So that 100,000 homes becomes 30,000 homes and it only becomes 30,000 homes in some times of the year...So if they're exaggerating about those, what else are they exaggerating about? (G6)

What developers have said, and I've got this right from the government, they usually say they anticipate about 30% capacity but when they're actually built all through Ontario, they all fail to reach what they've said. So in other words they say one thing but it never happens so it's much less viable than they've told everybody. (G5)

These representations of wind power's intermittency are consistent with the research of Devine-Wright (2005) which concludes that campaigners against wind power tend to

communicate intermittency issues by using concepts of unpredictability and uncontrollability, as well as notions of work over idleness. About half of the respondents pointed to the performance of the single turbines located at both Exhibition Place in Toronto, which is co-owned by Toronto Hydro, and the Pickering nuclear facility, which is visible from the Bluffs, as prime examples of wind power's low power output:

Toronto Hydro's current turbine operates at 12%. It loses money. And they'll never pay it off. And so, it's kind of one of those things where it's like, if that's 12% at the Ex and at the Pickering turbine it's, which is right on the water too, it's 18%, and you need like 35 to 40% to pay it back, um, how does this make economic sense? (G1)

In a similar vein to G1's comment above, several respondents argued that the capacity factors of wind turbines rendered wind energy uneconomic. Often this topic elicited pointed criticisms of the need for subsidies to make wind power economically viable although very few identified the FIT program specifically as the basis of subsidization, some referring to "tax breaks" and "grants" although none mentioned any one specific programme. Comments like, "if the government sets the price high enough, you'll make money even if the turbine turns once a year", conveyed a belief that even if wind projects did not produce much energy, developers would still make a large profit because of the higher prices paid for wind energy. Numerous respondents accused Toronto Hydro of knowingly planning a project that would not produce any energy. Criticism of wind power's performance often preceded the issue of the strength of the wind at the Scarborough Bluffs site in particular, which they claimed was not sufficiently strong to justify building an offshore wind farm:

Everybody knows how much wind is there, there's a Canadian Wind Atlas, there are two wind atlases that have been published by the provincial government, federal government so you can look at them to see how much wind there is at this very location...The Helimax report is very specific about how much wind you need. And the wind required is something...an excellent minimum of 8m/s and preferably higher. The wind out here at its peak in the winter is 6 point something. And so why are you putting a thing to measure the wind? (G4)

G4 also pointed to local knowledge of the wind conditions in the area, including his own observations and those of local stakeholders, as evidence that the area is not windy enough to justify an offshore wind farm:

And you can go out and look at the wind right there....And the sailors! We went and met with them and they were laughing hysterically about the wind out there because they're forever canceling regattas.

The belief that wind power could not produce sufficient power to play a significant role in the electricity supply mix also underlay arguments against its potential to deliver on perhaps its most widely touted benefit - reducing GHG emissions. Many disputed claims that wind could play a significant role in phasing out coal-fired plants in Ontario, citing the need for other technologies:

I think it's 2014 that they've committed to closing [coal-fired plants] by. Now they don't have to do anything. Now they eventually dance their way by it, but the only thing they can do to replace coal, as we were just saying earlier...fundamentally you need to have gas-fired plants. (G1)

There's coal technology now where there's no exhaust, it's all internalized through pressure which takes the carbon dioxide out, liquefies it, so it's that kind of stuff that's going to be pushed forward I think. (G7)

I'm beginning to believe that it's a smokescreen at a political level to conceal what the provincial government has known all along what they have to do and that is build nuclear stations. They have to. There's no other source that we know of that is clean. (G6)

As evidence of wind power's failure to reduce fossil fuel generation, some respondents pointed to European countries where it has been widely deployed:

In Europe right now, when they're planning these [wind] technologies, they even plan the coal plant...not only have we never been able to close a coal plant but we have to plan coal plants when we plan major wind projects because the wind is irregular and you can't store the energy. (G2)

They haven't closed down any coal plants in Denmark...They still don't have a way of storing energy so therefore, that's why if you read reports, they're actually using more coal and everything else to keep them fired up. It's not a supplier of energy, it's a supplement on good days. (G5)

In addition to claims that wind power was not capable of reducing carbon emissions, G1 argued that large-scale wind power deployment was unnecessary due to the fact that Ontario's energy supply mix is already mostly carbon-free. He felt that Ontarians should be more concerned with other sectors' larger contributions to GHGs such as transportation. He described it as "scary" that we believe that carbon free energy sources will solve the problem of climate change, saying:

We march towards oblivion telling ourselves that, "well, we build some more turbines so everything's going to be okay" and no, it's not.

Summary: All respondents claimed to have had a positive view of wind power before learning about Toronto Hydro's plans for the anemometer, revealing evidence of the social gap as described by Bell et al. (2005). They said that the proposal prompted them to research wind power extensively, and as a result of their efforts, they discovered that wind power is not an important source of energy because it is unreliable, uneconomic and, therefore, unable to deliver the benefits touted by its supporters, particularly its ability to effectively replace fossil fuel generation. Several respondents, however, asserted that they were in favour of small wind applications, which they did not consider harmful or intrusive.

6.4. Money and Politics Underlie the Push for Wind Power

All respondents weighed in at some point during the interviews as to what they believed were the drivers of political support for wind farms and developers' incentives to build them. These views were expressed in answer to questions such as: Who supports this project?, what is your opinion of the developer?, and; what do you believe motivates politicians to support wind power? In terms of politicians' motivations, respondents' answers were quite uniform:

Because it's seen as being green, green is good, all that in quotes, and they want to be seen as though they're doing their bit to follow the sentiments of

the Kyoto Protocol, that kind of thing. Yeah, they want to be seen as doing good [*sic*]. It is more politically motivated than anything else. (G6)

It's a way of governments looking green 'cause they have mandates now that they need to produce some renewable energy and they feel pressure I'm sure to do that. (G7)

Politicians love wind turbines. Like they're really sexy thing to out in re-election flyers. Like I get it. I completely get the politics of wind... You know, it's warm and fuzzy and we are all taught to love it. (G1)

'Cause politicians are getting paid off, whether that's in votes, whether that's in looking green, or appearing green, that is what's happening. (G8)

As demonstrated above, the most frequently given rationale for the government's support of wind power was the current trendiness and good political optics associated with it and "going green" in general. One respondent even declared that it is "political suicide if it sounds like you're anti-green". Some respondents also gave examples of political self-interests related to this project, particularly at the municipal level:

The Mayor doesn't give a darn about Scarborough. The mayor wants this as part of his legacy: Toronto as the greenest city in the world. And to do that, in his opinion, you have to stick a wind farm in the middle of the lake, right in front of the people. Because it's green, it's a safe political bet, but he doesn't live on the area, he'll never see it, it's just wasteland to him instead of something of importance, of heritage, something to be written up about. (G5)

The belief that Scarborough had been unfairly burdened with an offshore wind project for political gain was commonly expressed. Some respondents, like G5 above, described the situation as one in which Scarborough was being simply "used and dumped on" while others provided more detailed explanations as to why Scarborough, and not another jurisdiction, was the chosen location for the project:

We suggested to Hydro that they check Humber Bay. They said Humber Bay had a calming effect on the winds. Except that when you check the wind atlas, the winds are much stronger there than they are here. We also believe, I believe anyway, that they wouldn't put them in Humber Bay for political reasons. They would treat Scarborough with less respect than they would treat western Toronto, they're prejudice against Scarborough, it's not a convincing argument or anything but it is just a part of the facts. (G3)

A number of other respondents expressed similar views that Scarborough was not respected and was being taken advantage of by the rest of Toronto. Several respondents added to G3's account by claiming the original project had been planned to extend as far as the Beaches but that this had been scrapped for the political interests of a city councilor close to the Mayor. Some saw the conflict with Toronto Hydro as evidence of their community finally standing up for itself against unwanted developments:

We're still Scarberia out here and City Hall picks on us because [they rationalize] "we'll give it to them, they're a bedroom community, we'll give it to them"...So they went after us because they dump a lot on Scarborough and we have shut up about it and we've just taken it so now we're standing up. (G6)

Not only did respondents believe their community was being taken advantage of by the city and its wholly owned utility, Toronto Hydro, they also felt under attack from the province as well:

They [province and city] are so on side...I ran municipally and I've worked in provincial government and I've never seen anything like this...So it's one of these things where it's like provincial-municipal resources against the community, on behalf of the people funding the project. (G1)

One incident that several respondents put forth as evidence of the provincial government's backing of Toronto Hydro was a speech made by Premier Dalton McGuinty in February, 2009 in which he addressed the issue of NIMBYism with respect to renewable energy:

We're going to say to Ontarians that it's okay to object on the basis of safety issues and environmental standards; if you have real concerns there, put those forward and we must find a way to address those. But don't say, 'I don't want it around here.' ... NIMBYism will no longer prevail.⁵

Said G3:

⁵ Rob Ferguson and Leslie Ferenc, "McGuinty vows to stop wind-farm NIMBYs," *Toronto Star*, February 11, 2009 <http://www.thestar.com/news/ontario/article/585591>

To have the Premier of my province, who I had helped to elect, call me a NIMBYist and say the energy project would be foisted on us regardless of our opinions...And to have George Smitherman call us names also was extremely distressing for me...I don't think I've ever been as cynical about government as I am now. (G3)

Given the comments above, it is evident that respondents felt under siege by two levels of government in collusion with a major utility. They also asserted that environmental groups present at the November 23rd meeting were tied to the City of Toronto, and by extension, Toronto Hydro:

They're receiving money from provincial organizations and the City to finance this research...they're receiving money from the Toronto Atmospheric Fund, which is a municipal body governed by the province sort of with the City. It's one of these weird municipal equivalents of a Crown corporation. And they fund the Toronto Environmental Alliance advocacy and then Toronto Environmental Alliance came out to the meeting. (G1)

G7 expressed the same opinion although she described the connection as more direct, illustrating how information sharing can result in a simplification of the facts:

Toronto Hydro actually funds the Toronto Environmental Alliance, they're all linked and I guess they find it hard, almost impossible to, to distance themselves from their funding source and be intellectually pure about this. That's a scary thing too, that your environmental groups are tied to big business and they can't tell the truth. (G7)

Correspondingly, other respondents described the ties between Toronto Hydro and environmental groups present at the November 23rd meeting as "collusion," "the government is being lobbied" and "very outspoken people...crossbred with the special interest people." When asked what they considered special interest groups, Respondents, some of the definitions included "big wind," "the wind industry" and "anybody making money off this":

You see what people forget is that these wind developers are developers, they're not out to aid the environment, they're out to make money. And the government is handing it to them. (G3)

G3's comment above was indicative of many respondents' apparent frustration with the fact that, in debate over wind power, environmental groups tend to support wind

developers, which are most often private companies. This is indeed a unique situation with respect to conflicts over Locally Undesirable Land Uses (LULUs) where in the vast majority of cases, environmentalists and community members have joined together to resist industrial developments such as landfills and nuclear power plants. For this reason, respondents likely felt compelled to point out that the development of wind projects was not an act of environmental altruism, but guided by a profit-seeking motive, like other industries. Some painted wind developers in an even harsher light:

There is a very dark and sinister side to this industry, that's what has my alarm bells going off. Not just the way they lobby to get their projects through and then declare bankruptcy and then create another company and get more subsidies. It's a shell game. A lot of these companies are operating in very, what I consider, bad business practices and manners. (G7)

Anybody can be a developer, anybody...They're pushing green so hard it's open for anybody, it could be a criminal or anything, the money is there for the taking. In this case it happens to be Toronto Hydro. (G5)

Summary: Respondents were unanimous in their belief that politicians support wind power because it is considered 'green'. Because 'green' is currently trendy, it is also politically popular. They also felt that an offshore wind farm off the Bluffs would be an unfair burden on Scarborough, which, in their opinion, is frequently disrespected and taken advantage of by the rest of the GTA. According to respondents, the provincial and municipal politicians' quest to be seen as 'green' by lending support to wind power projects has led them to "collude" with the wind industry and environmental groups to push Toronto Hydro's proposal forward. They also voiced strong beliefs that the wind industry was guided purely by a profit-seeking motive and not by environmental considerations.

6.5. An Offshore Wind Farm Would Pose Risks to Human Health, Avian Life and the Local Community

Human Health

Threats to human health from an offshore wind farm were a predominant topic in the interviews, with most respondents identifying them as their foremost concern. In the majority of cases, the issue of human health impacts was raised without any direct question or prompting from the interviewer, unlike, for example, the issue of visual impacts. The majority of respondents indicated that the potential effects of noise and infrasound on human health were their chief concern and the most worrisome finding in their wind power related research. Respondents' knowledge on this front was quite uniform in that they tended to cite the same statistics (with slight variations) and provide similar technical explanations of the dangers posed by noise and infrasound, among other issues. It appears, therefore, that the greatest extent of knowledge sharing within the group revolved around this topic. Some comments also revealed that in many cases health impacts were not respondents' top concern at first:

My prime concern now is health. It's become that. It wasn't at first but it is now. I'll be honest at first it was NIMBYism, no question. (G6)

Rather, according to many respondents, concerns around health impacts were acquired through research and interaction with other members and other communities resisting wind power developments. G2 provided a fairly detailed explanation as to why infrasound is a threat, particularly with offshore wind farms:

We're in direct line of sight of this and sound over water goes on forever, so if there's infrasound, and there is, and low frequency sound, and you put them on Lake Ontario, you better have them way out there...If you put them on land, you have trees, you have hills, you have houses, absorbing the negative energy infrasound and the other sounds you hear. But on the lake it just goes on because there's nothing to absorb it! Not only that, because the more research we did, we found that under certain climactic conditions, the sounds turns into a cone instead of diffusing like this which it's supposed to do. Ah, it'll

hit an inversion and then it'll hit the lake, which is like glass if you wish, and then it creates its own wave, which goes further. (G2)

To emphasize their belief that an offshore wind farm would make them vulnerable to negative health impacts, respondents often cited statistics⁶ to describe the human cost of wind power:

You know 7% of the population do get sick within a certain 2 km range of this thing. (G5)

The Ministry of Environment says that 6.5% of the population will be affected...that's the Ministry's own numbers, so when you take 6.5% of roughly, I don't know, 200,000 people, that's a whole lot of bodies. (G6)

We have evolved to the point where we shouldn't be putting any citizens in danger for the sake of putting in a technology...5% of the population becomes collateral damage with industrial wind farming and that's amazing! (G8)

The issue of inequitable risk distribution - the belief that Guildwood residents would bear the brunt of any negative health impacts stemming from noise and infrasound – was most prevalent in discussions surrounding health impacts:

When we looked at it from a health point of view, holy shit! What's going on here? Five to ten percent of people who live near these devices get sick...If you put sixty or a hundred right off the coast here, in essence there's a half a million people...who live in the area...you're going to ruin the lives of 50,000 people...and that's us! Why? Because we're in direct line of sight of this. (G2)

The citations above convey respondents' view that wind turbines are exceedingly dangerous to a sizeable percentage of the population that lives near them. In discussing their beliefs about wind power's health impacts, none of the respondents compared it to any other of the dangers associated with prominent sources of electricity currently deployed in Ontario: nuclear, coal, natural gas and hydropower. When asked if they thought wind power was more dangerous than these other sources, particularly nuclear

⁶ The researcher did not inquire as to the sources of respondents' statistics. Dr. Nina Pierpont, whose work is discussed in this section, has claimed that 5% of otherwise healthy people, between the ages of 57 to 91, experience dizziness, and 24% experience tinnitus. Dr. Robert McMurtry, an Ontario orthopedic surgeon and outspoken critic of wind turbines' health impacts has claimed that 100 people in Ontario are currently experiencing adverse effects. As many respondents identified both Dr. Pierpont and Dr. McMurtry in their interviews, it is likely that some of the statistics cited were derived from their research.

power (Guildwood is situated about 10 km from the Pickering Nuclear facility), some answered that they didn't know, some claimed the question was difficult to answer with one Respondent describing it as a "profound" question. According to one respondent:

I'm not afraid of nuclear, I was in the nuclear industry at one point, and they're not these big bad guys you know who want to roast the rest of us. That's crazy! (G2)

While respondents demonstrated a strong conviction that wind turbines did in fact pose a threat to human health, they simultaneously claimed that there had not been any definitive research on the subject and likened the project going forward as "contrary to the precautionary principle":

They have no research to show that they will not do harm, and to me they should be like physicians and so should the government. First, do no harm, that should be their mantra...I've read transcripts of the meetings where the wind people say there's "oh, there's always going to be 15% of people who complain," as though they're expendable...They have no research to prove that they will not harm us and we have research to show the possibility exists. (G3)

Similarly:

It's not about proven impact, it's theoretical impact, because you don't know until you've done it [the research]. So this is a great frustration for us. It's just like if you just did the work, you could alleviate concerns. (G1)

When asked what particular research underlay their opinions about human health impacts, respondents frequently cited the work of Dr. Robert McMurtry, Dr. Lou Lombardi (a Guildwood resident) and a pediatrician licensed in New York State named Nina Pierpont, who is best known for her research on "Wind Turbine Syndrome".⁷ The

⁷ Dr. Pierpont is the author of *Wind Turbine Syndrome: A Report on a Natural Experiment*, which has been widely read and distributed among anti-wind activists. In the book she studies 10 affected families with 38 members living within 2 km of wind turbines. She claims that people get sick due to turbine infrasound and low frequency noise, creating what she describes as "a seemingly incongruous constellation of symptoms" which she has christened Wind Turbine Syndrome. These symptoms include: chronic sleep problems (the most prevalent), headaches, dizziness, nausea, exhaustion, anxiety, anger, depression, concentration problems and tinnitus. She also claims that Wind Turbine Syndrome is not exclusive to wind turbines and also affects those living close to natural gas compressor stations, industrial sewage pumping stations, and other power plants.

interviews were conducted before the Ontario government had undertaken any substantive studies on wind turbines and human health. In May 2010, Ontario's Chief Medical Officer of Health (CMOH) released a report entitled *The Potential Health Impact of Wind Turbines*,⁸ which concluded that while some people living near wind turbines report symptoms such as dizziness, headaches and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbines and adverse health effects (CMOH, 2010). Currently, the CMOH's report is the most in depth study that the Ontario has undertaken on the subject.

The validity of the research to date on wind turbines and human health emerged as a key topic in several interviews. Many contested the integrity of studies conducted by the wind industry itself:

The wind industry never gives a report on the harmful effects. They just shoo it off as if it's not important. They say there's thousands, 60,000 or so [turbines] all over the world and just a few complaints, you know around the world. But in actual fact, when it comes down to it, people who have wind farms imposed on their area, they live with it and get sick. (G5)

Avian

In addition to human health impacts caused by turbine noise, negative effects on birds and bats emerged as the second biggest perceived threat from an offshore wind farm. In discussing these effects, several respondents described the Scarborough Bluffs as important for avian life:

There are so many birds in this area. There's peregrine falcons, 80 species of bird we've seen from our window here, 80 species, we've counted them. Lots of rare birds, some of them are en route up north, some of them are nesting, the bats...and the bats are so important, they're more important than birds in terms of how we're affected. (G8)

⁸ The CMOH conducted a review of existing scientific evidence on the potential impact of wind turbines in collaboration and consultation with a technical working group composed of members of the Ontario Agency for Health Protection and Promotion, the Ministry of Health and Long-Term Care and the Council of Ontario Medical Officers of Health.

Because I live here, I know about the migrating birds. Like in the fall they take minutes to go by, like it's thousands and thousands of birds. (G5)

As demonstrated in the quotations above, discussions around avian impacts frequently elicited Local Ecological Knowledge (LEK). LEK is experiential knowledge, which can be a blend of learned scientific knowledge and knowledge based on a resident's own observations and experiences from surrounding nature (Davis & Wagner, 2003).

Personal observations and accounts of other local residents' observations were often coupled with assertions that while they weren't "scientific," or were "anecdotal but true," the concerns stemming from them should be considered valid and taken seriously:

I know this sounds emotional and ridiculous but loons gather here spring and summer...it's sort of a staging area, and you know how long it takes them to get off a lake...they would just keep flying right into the turbines. People in our group, and admittedly this is non-scientific, but who walk around where the Pickering turbine is, have found, in the past, decapitated loons. Because that was never there before, they believe it's connected with that turbine. (G3)

G5 identified his LEK as the driver for his sense of responsibility to protect the area:

Where they want to place them [turbines] is so close to the shore, about where the birds go, I know this from observation, from what I see...it's called a staging area, where they sit out there, it's just about the middle of where this wind farm's going to be planted... Because I've lived here 40 years, I know the environment, I sort of feel like I'm a keeper of the cliffs in a way. (G5)

"Avian mortality", the death of birds, bats and other avian species due to collisions with turbine towers, blades and power lines, is typically one of the most vociferous environmental concerns in conflicts over wind power (Sovacool, 2009). The issue of avian mortality has been extensively researched; a survey by Sovacool (2009) found more than 600 studies articles and reports investigating avian deaths and wind farms published from 1998 to 2008. Accordingly, respondents identified a number of concerns about an offshore wind project's effects on avian life:

I have read that in the areas with wind farms you don't get the variety anymore, the smaller songbirds go, the larger, more aggressive birds

unfortunately are the ones that stay. So you lose all that, you lose those connections, which I think are really important. (G7)

We're really worried about this. This is a major migration route for birds, for bats, for monarch butterflies. Their flight is somewhat erratic if you've ever seen them. And it's not just the turbines themselves...or the blades, it's changes they make in the atmospheric pressure around the turbine and the change they make in the force of air from the turbines that would affect avian life. (G3)

Now I know developers just disregard birds and they like to say more cats kill birds, which is true, or buildings kill birds, which is true, but it's the type of birds. Like some birds sure, are killed on buildings at night but what happens with these offshore sites is that these things have to have navigational lights, beacons, that are flashing all night long, which is another annoying thing for any resident, or anyone who wants to enjoy the peace and beauty, there will be flashing lights. And what these lights do for night migratory birds, they follow light....It's the larger birds that are the ones that are more susceptible, not the little songbirds...And there's no way of knowing how many will get killed because once they're killed out there, they're in the water and no one knows. It's a research thing that's very hard to research (G5)

G5 was the only respondent to contextualize avian mortality to some extent, although not with regards to other energy sources. Indeed, according to Sovacool (2009), one of the main problems with the current research on avian mortality is a lack of comparison between avian deaths from wind electricity and other energy sources, specifically the calculation of the number of avian deaths per kWh from energy sources in order that more meaningful comparisons might be made between different forms of electricity supply resources. To address this knowledge gap, Sovacool (2009) estimates that wind farms killed approximately 7,000 birds in the United States in 2006 but nuclear plants killed 327,000 and fossil-fueled power plants killed 14.5 million.⁹

So why has avian mortality from wind power become such a cause for concern when other energy sources are responsible for considerably higher mortality rates?

⁹ To measure wind power's impact on birds, avian mortality was quantified per GWh for 339 individual turbines (six wind farms in total) constituting 274 MW of capacity (using a capacity factor of 33%). The results show that those 339 turbines were responsible for 0.279 avian deaths per GWh. To estimate nuclear power's impact on avian life, Sovacool took into account both upstream and downstream fatalities from 4 nuclear facilities assuming a 90% capacity factor. The result is a total of 0.416 avian deaths per GWh. For fossil-fuel related avian mortality, Sovacool added deaths from coal mining, plant operation, acid rain, mercury and climate change together to arrive at a total of 5.18 fatalities per GWh.

Pasqueletti (2004) suggests that wind turbines seem to present a significant threat to birds because all of their negative externalities are concentrated in one place, while those from conventional and nuclear fuel cycles are spread across space and time. Consequently, wind energy has received far more attention and research than the avian deaths associated with coal, oil, natural gas and nuclear power systems.

Compared with discussions around avian impacts, far fewer issues with respect to impacts on aquatic life were raised. It is possible this is because many of the concerns about birds were based on LEK, or direct observation of bird life, as demonstrated above. As none of the respondents identified themselves as recreational fishers, one could assume that direct observations were substantially less than in the case of birds. Nonetheless, a few concerns about fish emerged such as:

They're ignoring the fact that 50% of Toronto's remaining wetlands is right at the mouth of the Rouge River, which has 55 species of fish, which is 2 km from where they want to put the anemometer in the water. (G1)

Concerns related to aquatic life were generally coupled with concerns about the effects of building wind turbines in freshwater, which were discussed in Section 6.1 of this MRP.

Community

The impact of an offshore wind farm on the Guildwood community itself did not emerge as a predominant concern in most interviews. It also tended not to be a topic raised by the respondents, unlike health and avian impacts. When asked if and how an offshore wind project would impact the community, answers concerns ranged from "it'll kill the community" to adverse effects on property values and residents deliberately leaving the community because of it:

Well, I've heard people say they would leave. One of the people in our group, even though he doesn't live on the lake, he lives several blocks in but he's in the community, but they enjoy the lake, they go down there, they said they'd leave they'd be so disgusted...I actually don't know what I would do if a wind farm ever went in here. I know it would tick me off, in fact I'd have to live with it

and like if I go out there as I do every day, if it makes me mad every day, then I'd have to leave. (G5)

Property values would have to fall, no question about it...The reason property values would fall is really quite simple: it's fear. It is fear on behalf of the buyer. They don't know whether they're one of the 6.5% of people that are going to be affected so they're not going to take a chance. So they just stay away in droves. (G6)

While G6 claimed adverse impacts on property values would occur due to people's fear of health concerns, G3 and G4 attributed them to the changes in the view from shore,

These houses are expensive relative to the area because of the view, you read real estate anywhere and it talks about lake view, that's an added dollar value to a condo, say, that has a lake view versus a similar condo that doesn't. I mean we can prove the lake view has value. (G3)

It's actually [written] down in assessments, here's the value of your house, you've got 3 bedrooms, you've got a roof, you've got all sorts of things and we're adding \$400,000 to your assessment [because of the view]. (G4)

When asked if this concern had been responded to, G3 responded: "Well we don't say anything about it because that's a NIMBY argument".

Summary: Perceived threats to human health due to low frequency noise issues emerged as a top concern for respondents when discussing adverse impacts of an offshore wind farm. Respondents' knowledge on this front was quite uniform and indicated that health issues had been a predominant topic in their research and knowledge sharing. Most respondents shared the conviction that wind turbines adversely affect around 5% of the population that reside in close proximity to them. They also believed they will bear the brunt of health risks such as those outlined by research they trust, particularly that of Dr. Pierpont and Dr. McMurtry. Respondents demonstrated acute distrust of any health studies conducted by the wind industry.

Respondents' second biggest environmental concern stemming from an offshore wind farm was its impact on birds and bats. Respondents demonstrated LEK of avian life in the area and expressed their concerns based on what they had observed. They

tended not to contextualize avian mortality from wind turbines versus other energy sources such as fossil fuel and nuclear, and which peer-reviewed research suggests are significantly more harmful to avian life.

Concerns about an offshore wind farm's impact on aquatic life and the community itself were not as prevalent as those about health and avian life. While a few concerns arose about aquatic life, they were not as detailed as avian or health impacts and did not appear to stem from LEK. In general, respondents speculated that the impact of an offshore wind farm would result in people deliberately leaving the community and would reduce property values. Some respondents said they felt reluctant to express concerns over property values because they were always dismissed as evidence of NIMBY.

6.6. NIMBYism Is a Duty

As discussed in Section 3.3 of this MRP, individuals opposed to wind power are commonly accused of being NIMBYists who resist a public good for selfish and unwarranted reasons (Wustenhagen et al., 2007; Swofford & Slattery, 2010; van der Horst, 2007; Kempton et al., 2005; Wolsink, 2000; Krohn & Damborg, 1999).

Respondents in this research were well aware that their actions to prevent an offshore wind farm from being built were considered NIMBY; as previously stated in Section 6.4, the Premier of Ontario had even alluded to this. Like Burningham (2000), some respondents accused wind proponents of using the NIMBY label to discredit their opponents:

It's a trump card. I mean you throw it at somebody, if it sticks they're discredited and can't say anymore...I just think people, depending on where they live, have a duty to worry about the local things because if you don't who will? (G8)

Some respondents challenged the NIMBY classification by arguing that their opposition does not fit the definition because, as Wolsink (2000) argues, they don't consider wind

power a public good for numerous reasons outlined in this research. Some respondents furthered this opinion by comparing an offshore wind farm to the types of industrial developments that are typically challenged by local communities:

It wouldn't be much different than suddenly being next door to a refinery. You know, somebody decides to build a large wall-to-wall industrial complex of some kind and it's going to be there right in your face at all times. (G2)

Additionally, some argued that their opposed stance does not constitute NIMBY as defined by Dear (1992) – people objecting to something they regard as detrimental in their vicinity but not opposed to it elsewhere – because they object to offshore wind everywhere, not only in their 'backyard':

I don't want it in my backyard, but I also don't want it in Lake Erie, I don't want it in Lake Ontario." (G7)

A question that arose in several discussions about NIMBYism was whether respondents thought it was a fundamentally negative phenomenon. Some respondents said that it wasn't by pointing out that concern for the health and safety of one's home, family and local environment is a core value of the modern environmental movement rather than a selfish pursuit:

I believe it is a wise and prudent thing to protect our selves, our own health, our house, and our property and that includes our dog, the birds and everything around here...What is wrong with wanting to protect your own house and property? What's wrong with that? I mean duh, to me, everyone should be concerned about that...I just think it is part of our job, part of our being humans to protect that and I don't think that anybody has a right to call that selfish. (G3)

It's not a NIMBY thing if you're protecting the area you've been blessed to be able to live in. It's a bit of altruism...It's not NIMBY in the, you know, it will affect my property values, it's NIMBY in that I know the cliffs better than you do, I know the lake better than you do, this is bad for the cliffs, this is bad for the lake. (G1)

Indeed the most well known cases of environmental injustice, such as the toxic contamination of Love Canal, New York by Hooker Chemical, and the lawsuit brought

against PG&E by Erin Brockovich, have been fought on the same premise as G3 and G1's arguments above. By describing the protection of the local environment as "part of our job" and "a bit of altruism", respondents were characterizing their opposition to the project as a duty and selfless, respectively. By alluding to "part of our being humans", G3 also characterizes their response as natural or innate. According to G1, LEK forms the basis of one's sense of duty to protect one's surroundings; because they know the area better than anyone else, they are more knowledgeable as to what they perceive as its adverse impacts.

However, while most respondents did not wholly shy away from the "natural" or "altruistic" and "prudent" NIMBY label, some said the fear of being labeled NIMBY had caused them to hesitate in acting:

That's why we didn't do anything at first because we felt guilty...we didn't want to be accused of being NIMBYs. (G4)

As shown in the previous section, some respondents also indicated they felt certain topics were off limits in their arguments against the project because they were considered 'selfish' by the wider public:

We don't talk about effects on property values, you know, that's so NIMBY. (G3)

And:

You can't talk about the view, or how this [an offshore wind farm] will change how we see things...it's not allowed because it's NIMBY. (G7)

van der Horst's (2007) findings show that fear of being branded NIMBY is likely to distort the answers of respondents in wind energy research. While respondents in this case did not shy away from the topic, the results of Section 6.1 show that they did not emphasize potential visual impacts from an offshore wind farm, though when the subject of the land- and waterscapes came up, they spoke at length about their significance and beauty.

Wolsink (2000) had this to say about aesthetic concerns "...people unconsciously realize that opposition on aesthetic grounds is often dismissed by public officials and developers being seen as subjective." While it is impossible to know whether respondents' reluctance to discuss aesthetics was deliberate or unconsciousness, it was clear that they all were more prepared to discuss the reasons for their opposition on concerns such as noise, consultation proceedings and avian mortality, which can be more objectively evaluated.

Certainly, many respondents were convinced that the intensity of their concern for their backyard was a 'force to be reckoned with':

You can call me a NIMBY because this is my backyard. The good thing about NIMBYs is if it weren't for NIMBYs, nothing would ever be stopped...NIMBYs are good in that they alert the people. Even though they're the ones that have to suffer...

I'm so concerned, I am passionate this thing isn't going in there. Like I'm not going to allow it and I'm going to do everything I can do to stop it. (G5)

Summary: Respondents were conscious of the fact that their actions to prevent an offshore wind farm from being built were widely considered as a display of the NIMBY phenomenon. Some addressed this by arguing that their attitudes towards a potential offshore wind farm did not fit the definition of NIMBY, namely because they either did not approve of offshore wind anywhere in the Great Lakes, or because they do not consider it a public good in the first place. Others embraced the NIMBY label to some extent, arguing that it was a natural response arising from the desire to protect one's health and local environment. Furthermore, some respondents indicated that they felt they could not express certain concerns, such as impacts on the aesthetics of the area and property values, because they were afraid of being labeled NIMBY. However, there were also indications that the depth of respondents' concerns about their health and neighbourhood would ultimately prevent the wind farm from being built.

7. SUMMARY OF INTERVIEW FINDINGS

Drawing from the results of the interviews presented in the previous section, Table 2 below summarizes the principal reasons why respondents in this research oppose a wind farm at the location where Toronto Hydro is currently measuring the wind speed.

Table 2. Summary Chart of Interview Findings

Reason for Opposition	Respondents' Rationale
The Bluffs are a Special and Unique Place: Industrial Wind Power Does Not Belong	<ul style="list-style-type: none"> • Guildwood is a place of natural beauty and tranquility unique to the GTA, an important place for wildlife, and a refuge from the city for its residents; • The Bluffs are the symbol of Scarborough and one of the last remaining intact stretches of the GTA shoreline; • An "industrial-scale" offshore wind farm would significantly reduce the value of the Bluffs as a special and unique place; a loss for Guildwood residents and Torontonians alike; • While visual impacts on the landscape are an important reason for opposing an offshore farm to some, others claim it had little to do with it; • Changes to the view off the Bluffs would negatively affect people's relationship with the lake; • The lake should not be "industrialized" both for aesthetic and spiritual reasons as well as practical reasons such as potential adverse effects on Toronto's drinking water
Community Consultation Was Dishonest and Evasive	<ul style="list-style-type: none"> • Toronto Hydro had been planning the project long before the local community was informed about it, forfeiting opportunities for collaboration; • As a result, the community was alienated from the decision-making process around the siting of the anemometer, and by extension, the project; • Toronto Hydro representatives were dishonest on several occasions about the location of the project and who supported it; • Toronto Hydro failed to effectively address community concerns about an offshore wind farm at their public consultations by choosing to answer questions about the anemometer only; • Toronto Hydro deliberately stacked the public meeting with pro-wind supporters and special interest groups in order to stifle local people's questions and concerns; • Consequently, those who were to be affected by the

	project were silenced by those who were not.
Wind Power's Viability and Benefits are Exaggerated and/or False	<ul style="list-style-type: none"> • Wind power is not an important source of energy because it is unreliable and inefficient, with most wind farms operating at very low capacity factors; • Because it is inefficient, it is not economically viable without large subsidies; • This incentivizes developers to build wind farms even where the wind speeds are not sufficiently strong, such as in front of the Scarborough Bluffs; • It also cannot deliver the environmental benefits touted by its supporters, particularly its ability to effectively replace fossil fuel generation; • The general public supports wind power because they are unaware of its negative characteristics and impacts; • The wind industry has deceived the public into believing wind power is "green".
Money and Politics Underlie Support for Wind Power	<ul style="list-style-type: none"> • Municipal and provincial politicians support wind power because it is considered "green" and "green" is currently trendy; • In their quest to appear green, politicians are placing an unfair burden on Scarborough, which is frequently disrespected by the rest of the GTA; • Municipal and provincial politicians have colluded with the wind industry and environmental groups to push Toronto Hydro's proposal forward; • The wind industry is guided purely by a profit-seeking motive and not by environmental considerations.
An Offshore Wind Would Pose a Threat to Human Health, Avian Life and the Community	<ul style="list-style-type: none"> • Adverse effects to human health due to low frequency noise emanating from turbines, also referred to as Wind Turbine Syndrome, is the biggest threat posed by an offshore wind farm; • According to research conducted by Dr. Pierpont and Dr. McMurtry, wind turbines adversely affect a sizeable portion of the population that reside in close proximity to them; • The Provincial government and wind developers are ignoring the "precautionary principle"; • Health studies conducted by the wind industry that conclude there are no health risks should not be trusted; • The second biggest environmental impact stemming from an offshore wind farm is avian mortality, both birds and bats; • The Bluffs are an important landscape feature for avian life; • Many local residents' concerns about avian life are

	<p>based on their own observations and LEK;</p> <ul style="list-style-type: none"> • An offshore wind farm would result in people deliberately leaving the community and would reduce property values; • Residents are reluctant to express concerns over property values for fear they will be labeled NIMBYists.
NIMBYism Is a Duty	<ul style="list-style-type: none"> • The NIMBY label is used by proponents of an offshore wind farm to discredit those who are affected and therefore concerned; • STB members are not NIMBY because they do not approve of wind power in any of the Great Lakes, nor do they consider it a public good; • However, NIMBY in this case is not a negative response because it is natural to want to protect one's health and local environment. • STB members are wary of voicing concerns about impacts on the aesthetics of the area and property values because they will likely be dismissed as evidence of NIMBYism; • The depth and intensity of affected peoples concerns will ultimately prevent the wind farm from being built.

8. WHAT THE RESULTS TELL US

Wind Power is a New Kind of Environmental Controversy

The conflict over an offshore wind farm off the Scarborough Bluffs is evidence of a new kind of environmental controversy that is likely to persist for some time. Parties that have previously worked as allies, namely local people facing a LULU and environmental organizations, now find themselves on opposing sides of wind energy conflicts. Clearly, this was a surprise and affront to respondents, who also consider their concerns 'environmental', and feel alienated and ganged up upon by what they perceive as the joint forces of government, pro-wind activists and developers.

In addition, proponents' tendency to emphasize the global benefits of wind power, such as GHG reductions, have had little influence on residents' attitudes as they are mostly concerned with local impacts on their health and immediate surroundings. A good

example of what Warren et al (2005) dub the 'green on green' debate, the controversy of an offshore wind off the Scarborough Bluffs, in which global benefits have been pitted against local concerns, is perhaps a foretaste of environmental debates to come in Ontario and the numerous other North American jurisdictions pursuing offshore wind energy. Warren et al. (2005, p.854) write:

Society has gone green (at least in its rhetoric), but what kind of greenness do we want? Developed societies require large quantities of energy, and *all* forms of power generation have environmental impacts. Which types of impact should be judged to be acceptable and unacceptable, judged by which criteria?

These are important questions that reflect the ongoing conflict between convenience and cost, livelihood and landscape, nature and need – ones that need to be considered in electricity supply resource planning and decision-making (Pasqualetti, 2002). The interviews show that people affected by renewable energy projects are asking these questions, and challenging the 'greenness' of wind power.

Meaningful Dialogue between Proponents and Opponents is Lacking

There is an urgent need for the Provincial Government and wind industry to better educate the public about offshore wind energy, highlighting how it differs from both onshore wind power and conventional sources. The interviews show that respondents believe an offshore wind farm would not be beneficial in any way and would pose serious risks to their health and the local environment. Evidently, the public consultation meetings did not address these issues adequately to satisfy their concerns. The format and high numbers of attendees at Toronto Hydro's meeting made it very difficult for affected community members to participate. It became a venue, to some extent, for a debate about offshore wind energy rather than an opportunity for gathering local people's opinions and values and answering questions and concerns.

At the same time, the risks associated with and cost of offshore wind need to be contextualized with the risks posed by other electricity supply resources available in Ontario, as well as their life-cycle costs. In terms of individual projects, it is unfortunate that noise, avian, aquatic and all other studies that quantify and describe its impacts are undertaken well after its location is decided. This is an inevitable fact of wind power planning as the wind resource cannot be tested before the land rights are secured, and it is very difficult to finance such studies without wind studies demonstrating a potential project's cost-effectiveness. Consequently, it is challenging for affected people to form informed opinions about a proposed project without concrete information, which can lead to overestimations of the risks it may pose.

Landscape Values Matter

This research shows landscape values matter a great deal in terms of local people's attitudes towards wind projects. This assertion is widespread in the literature and evident in this research, particularly in places, such as Guildwood, where residents derive a positive sense of identity from the local environment. For this reason, concerns over the changes to the view and how they will affect people's relationships with their natural surroundings, while perhaps to some degree subjective, should not be dismissed or stigmatized to the extent that people are loathe to voice them for fear of being branded 'selfish'. Residents suppressing, what is in many cases their greatest but unvoiced concern, may have lead them to over emphasize other concerns which could distort our understanding of what factors matters to them the most.

Another consequence of not factoring the landscape into the debate is that local people have even less opportunity to provide input into the location and design of a project. Unfortunately, most commercial wind developers do not include the local

community in the general siting of a project, although for onshore wind farms they deal with landowners on an individual level. Wind power's expansiveness needs to be reconciled, particularly if Ontario is to keep expanding wind power capacity at the current rate. Clearly, the top-down approach to wind power planning has created a relative firestorm across rural Ontario, as evidenced by WCO's widespread membership.

In terms of siting offshore wind, it will be interesting to see if the MOE's recently proposed 5 km setback for all offshore wind projects from shorelines and major islands calms some of the tensions that have sprung up in areas where offshore wind projects have been proposed close to shore. Indeed one of offshore wind's recognized benefits is that it can be located far from residences. In Ontario, however, most developers have located their projects close to shore, some up to only 1 km away, due to lower transmission costs. As a result, these projects have met with resistance from people living in the immediate vicinity.

9. CONCLUSION

This research paper explored the factors that have influenced opposition to the idea of an offshore wind farm off the Scarborough Bluffs in Lake Ontario proposed by Toronto Hydro. Guildwood residents residing in close proximity to the proposed project have expressed numerous concerns about its potential impacts on their health and the local environment, and have formed an incorporated organization to stop it from being built. The intensity of interest in the proposal drew over one thousand people to a public meeting in November 2009, which quickly devolved into a forum for pro-wind supporters and frustrated residents to advocate their positions.

Semi-structured interviews and Grounded Theory coding analysis were undertaken to extract the values, beliefs and logic that underlie Guildwood residents' negative

attitudes about a potential offshore wind farm. Results from the interviews revealed six major themes that explain and describe residents' attitudes: The Bluffs are a Special and Unique Place; Industrial Wind Power Does Not Belong in the Lake; Consultation was Inadequate and Offensive; Wind Power's Viability and Benefits are Exaggerated and/or False; Money and Politics Underlie the Push for Wind Power; An Offshore Wind Farm Poses Risks to Human Health, Avian Life and the Local Community, and; NIMBYism is a Duty.

The conflict over an offshore wind farm near Guildwood exemplifies the new kind of environmental controversy that wind power has created across Ontario, where often times opponents and proponents argue their cases in environmental terms. The results of this research demonstrated that the public consultation efforts made by Toronto Hydro have done little to quell residents' concerns and have, in fact, heightened the conflict to some extent. They also showed that residents' landscape values have played an important role in their reactions to the idea of a large offshore wind farm close by, even though they have been reluctant to emphasize for fear of being branded NIMBY. This may have caused them to overemphasize other perceived risks.

The offshore wind industry and the Provincial Government must better articulate the benefits and drawbacks of offshore wind to the public if people affected by projects are to form informed opinions about them. One of the main obstacles to this is the absence of real data about their impacts in the Great Lakes. Furthermore, greater participation earlier on in the process could serve to calm tensions between developers and communities, although it may not result in changing general attitudes.

REFERENCES

- Allan, G. (2003). A critique of using grounded theory as a research method. *Electronic Journal of Business Research Methods*, 2(1): 1-10.
- Bell, D., Gray, T., and Haggett, C. (2005). The 'social gap' in wind farm siting decisions: explanations and policy responses. *Environmental Politics*, 14(4): 460-477.
- Beniwal, A. (2010, April). Cape Wind Receives Final Regulatory Approval," *North American Windpower*. Retrieved June 8, 2010 from http://www.nawindpower.com/naw/e107_plugins/content/content.php?content.5785
- Bosley, P., and K. Bosley. (1988). Public acceptability of California's wind energy developments: Three studies. *Wind Engineering*, 12(5): 311-318.
- Brittan, Jr., G. G. (2002). The wind in one's sails: A philosophy. In *Wind power in view: Energy landscapes in a crowded world*. eds. M. Pasqualetti, P. Gipe, and R. W. Righter, 59-79. San Diego: Academic Press.
- Brion, D.J. (1991). *Essential industry and the NIMBY phenomenon*. New York: Quorum Books.
- Burningham, K. (2000). Using the Language of NIMBY: a topic for research, not an activity for researchers. *Local Environment*, 5(1): 55-67.
- Burningham, K., and Thrush, D. (2004). Pollution concerns in context: a comparison of local perceptions of the risks associated with living close to a road and a chemical factory. *Journal of Risk Research*, 7(2): 213-232.
- Chief Medical Officer of Health. (2010, May). *The Potential Health Impact of Wind Turbines*. Retrieved September 16, 2010 from http://www.health.gov.on.ca/en/public/publications/ministry_reports/wind_turbine/wind_turbine.pdf.
- City of Toronto. (2006). *Guildwood Neighbourhood Profile*. Retrieved August 23, 2009 from http://www.toronto.ca/demographics/cns_profiles/cns140.htm
- Coleby, A.M., Miller, D.R., and Aspinall, P.A. (2009). Public attitudes and participation in wind turbine development. *Journal of Environmental Assessment Policy and Management*, 11(1): 69-95.
- Cresswell, J.W. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (2nd Edition). Thousand Oaks, CA: Sage Publications.
- Davis, A., and Wagner, J.R. (2003). Who knows? On the importance of identifying "experts" when researching Local Ecological Knowledge. *Human Ecology*, 31(3): 463-489.

Dear, M. (1992). Understanding and overcoming the NIMBY syndrome. *Journal of the American Planning Association*, 58(3): 288–300.

Devine-Wright, P. (2005). Beyond NIMBYism: Towards an integrated framework for understanding public perceptions of wind energy. *Wind Energy*, 8: 125-139.

Devlin, E. (2002). *Factors affecting public acceptance of wind turbines in Sweden*. Master Thesis of Lund University's Master in Environmental Studies and Sustainability Science (LUMES).

Ek, K. (2005). Public and private attitudes towards “green” electricity: the case of Swedish wind power. *Energy Policy*, 33: 1677-1689.

Emerging Energy Research. (2009, December) *Global Offshore Wind Energy Markets and Strategies, 2009-2020*. Retrieved December 21, 2009 from <http://www.emerging-energy.com>

Environmental Commissioner of Ontario. 2009. *Finding a Vision for Change: Annual Greenhouse Gas Progress Report 2008/2009*.

European Wind Energy Association. (2009). *Current role and future prospects for offshore wind in Europe*. Retrieved August 10, 2009 from <http://www.ewea.org/index.php?id=203>

European Wind Energy Association. (2010, January). *The European Offshore Wind Industry: key trends and statistics 2009*, Retrieved June 8, 2010 from <http://www.ewea.org/fileadmin/emag/statistics/2009offshore/pdf/offshore%20stats%20092.pdf>

Firestone, J., and Kempton, W. (2007). Public opinion about large offshore wind power: underlying factors, *Energy Policy*, 35: 1584-1598.

Glaser, B.G. and Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.

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: 2727-2736.

Haggett, C. (2004, June). *Tilting at Windmills? The Attitude-Behaviour Gap in Renewable Energy Conflicts*. Second Progress Report, Landscape Research Group, Univeristy of Newcastle.

Hebert, Paul (Lead Author); Biodiversity Institute of Ontario (Content Partner); Mark McGinley (Topic Editor). 2007. "Lake Ontario, Ontario." In: *Encyclopedia of Earth*. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [First published in the *Encyclopedia of Earth* October 30, 2007; Last revised November 2, 2007; Retrieved October 23, 2009], http://www.eoearth.org/article/Lake_Ontario,_Ontario (accessed October 23, 2009).

International Energy Agency. *Task 23: Offshore Wind Energy Technology Deployment*. Retrieved July 28, 2010 from http://www.ieawind.org/Annex_XXIII.html

Heckbert, D. (2009, April). Wind kicks up in North American waters: Policy, projects take shape, *New Energy Finance*, p.6.

Helimax Energy Inc. (2008). *Analysis of Future Offshore Wind Farm Development in Ontario*, prepared for the Ontario Power Authority, Exhibit D-5-2, Attachment 1.

Hoppe-Klipper, M., and Steinhäuser, U. (2002). Wind landscapes in the German Milieu. In *Wind power in view: Energy landscapes in a crowded world*, eds. M. Pasqualetti, P. Gipe, and R. W. Righter, 83–99. San Diego: Academic Press.

Jacobson, M.Z. (2009). Review of solutions to global warming, air pollution, and energy security. *Energy and Environmental Science*, 2: 148-173.

Jacobsson, S., and Lauber, V. (2006). The politics and policy of energy system transformation-explaining the German diffusion of renewable energy technology, *Energy Policy*, 34(3): 256-276.

Jobert, A., Laborgne, P., and Mimler, S. (2007). Local acceptance of wind energy: Factors of success identified in French and German case studies. *Energy Policy*, 35: 2751-2760.

Johansson, M., and Laike, T. (2007). Intention to respond to local wind turbines: the role of attitudes and visual perception. *Wind Energy*, 10: 435–457.

Junginger, M., and Faaij, A. (2003, June). *Cost reduction prospects for the offshore wind energy sector*, Symposium conducted at the European Wind Energy Conference & Exhibition, Madrid, Spain.

Kempton, W., and Firestone, J. (2007). Public opinion about large offshore wind power: Underlying factors. *Energy Policy*, 35(3): 1584-1598.

Kempton, W., Firestone, J., Lilley, J., Rouleau, T., and Whitaker, P. (2005). The offshore wind power debate: Views from Cape Cod, *Coastal Management*, 33: 119-149.

Krohn, S., Damborg, S. (1999). On public attitudes towards wind power. *Renewable Energy*, 16: 954-960.

Ladenburg, J. (2009). Visual impact assessment of offshore wind farms and prior experience. *Applied Energy*, 86: 380-387.

Lake Ontario Ports. (2009). *Scarborough Bluffs*. Retrieved April 9, 2010 from <http://www.lakeontarioports.com/directory/show/3>

Lake Ontario Waterkeeper. (2009). *Lake Ontario Waterkeeper Comments re: Proposed wind anemometer in Lake Ontario off Scarborough Bluffs*. Retrieved December 11, 2009

from <http://www.waterkeeper.ca/2009/05/15/lake-ontario-waterkeeper-comments-re-proposed-wind-anemometer-in-lake-ontario-off-scarborough-bluffs/?printerFriendly>

Lindlof, T.R. and Taylor, B.C. (2002). *Qualitative Communication Research Methods* (2nd Edition), Sage Publications, Thousand Oaks, CA.

Lober, D. J. and D. P. Green. (1994). NIMBY or NIABY: A logit model of opposition to solid-waste-disposal facility siting. *Journal of Environmental Management*, 40: 33-50.

Malone, S. (2009, July). Offshore wind could be next wave for U.S., *Reuters*. Retrieved August 10, 2009 from <http://www.reuters.com/article/idUSTRE56Q5VO20090727>

Marketwire. (2010, March). Naikun Wind Looks to Success Beyond Clean Power Call, *Marketwire*. Retrieved June 9, 2010 from <http://www.marketwire.com/press-release/NaiKun-Wind-Looks-to-Success-Beyond-Clean-Power-Call-TSX-VENTURE-NKW-1141245.htm>

McGowan, F., Sauter, R., and Brighton, E. (2005). Public Opinion on Energy Research: A Desk Study for the Research Councils. Sussex Energy Group, Science and Technology Policy Research Unit, University of Sussex.

Ministry of Energy and Infrastructure. (2009). *Ontario's Green Energy Act: Our Path to a Green Economy and a Cleaner Environment*. Retrieved November 12, 2009 from <http://www.mei.gov.on.ca/en/energy/gea/>

Ministry of Municipal Affairs and Housing. (2010). Renewable Energy Projects Subject to Planning Exemption. Retrieved August 16, 2010 from <http://www.mah.gov.on.ca/Page6679.aspx>.

Nadai, A. (2007). "Planning," "siting" and the local acceptance of wind power: Some lessons from the French case. *Energy Policy*, 35: 2715-2726.

New York Power Authority. (2009, December). NYPA President Kessel Calls for Proposals to Develop the First Fresh Water Wind Energy Initiative in the Nation: Increasing Emissions-Free Wind Power will Contribute to Cleaner Air and Job Growth. Press Release retrieved December 13, 2009 from <http://www.nypa.gov/press/2009/091201.htm>

Pasqualetti, M.J. (2001). Wind energy landscapes: society and technology in the California desert. *Society and Natural Resources*, 14: 689-699.

Pasqualetti, M.J. (2002). Living with wind power in a hostile landscape. In *Wind power in view: Energy landscapes in a crowded world*. eds. M.J. Pasqualetti, P. Gipe, and R.W. Righter, 153–72. San Diego: Academic Press.

Pasqualetti, M.J. (2004). Wind power: obstacles and opportunities, *Environment*, 46 (7): 22-38.

Petroleum Economist. (2010, January) UK awards big offshore wind-power concessions, *Energy Report*. Retrieved January 26, 2010 from <http://www.petroleumeconomist.com/default.asp?Page=5&PUB=46&ISS=25558>

Phillimore, P., Moffatt, S. (2004). If we have wrong perceptions of our area, we cannot be surprised if others do as well: Representing risk in Teeside's environmental politics. *Journal of Risk Research*, 7(2): 171-184.

Pollara. (2009). *Green Energy Act, 2009 Community Survey*. Retrieved November 16, 2009 from www.greenenergyact.ca/Storage/25/1707_GEA_Summary_Report.pdf

Righter, R.W. (2002). Exoskeletal outer-space creations. In *Wind power in view: Energy landscapes in a crowded world*. eds. M. Pasqualetti, P. Gipe, and R.W. Righter, 19-41. San Diego: Academic Press.

RWE Innogy. (2009, April). *Factbook Renewable Energy*. Retrieved December 8, 2009 from <http://www.rwe.com/web/cms/en/87200/rwe-innogy/company/fact-book/>

Salganik, M.J. and D.D. Heckathorn. (2004). Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology*, 34: 193–239.

Scheer, H. (2007). *Energy Autonomy: the economic, social and technological case for renewable energy*, London, UK: Earthscan.

Shepherd, A. and Bowler, C. (1997). Beyond the requirements: Improving public participation in EIA, *Journal of Environmental Planning and Management*, 40(6): 725-738.

Short, L. (2002). Wind power and English landscape identity. In *Wind power in view: Energy landscapes in a crowded world*, eds. M. Pasqualetti, P. Gipe, and R.W. Righter. San Diego: Academic Press.

Schwahn, C. (2002). Landscape and policy in the North Sea marshes. In *Wind power in view: Energy landscapes in a crowded world*. Eds, M. Pasqualetti, P. Gipe and R.W. Righter. San Diego: Academic Press.

Shepherd, A. and Bowler, C. (1997). Beyond the requirements: Improving public participation in EIA. *Journal of Environmental Planning and Management*, 40(6): 725-738.

Simpson, J. A., and E. S. C. Weiner. (2003). eds. *Oxford English Dictionary* (2nd ed.). 1989. Additions 1993-7 (ed. John Simpson and Edmund Weiner; Michael Proffitt), and 3rd ed. (in progress) Mar. 2000 (ed. John Simpson). OED Online. Oxford University Press. Retrieved November 23, 2009 from <http://dictionary.oed.com>

Sims, R.E.H., Schock, R.N., Adegbululgbé, A., Fenhann, J., Konstantinaviciute, I., Moomaw, W., Nimir, H.B., Schlamadinger, B., Torres-Martinez, J., Turner, C., Uchiyama, Y., Vuori, S.J.V., Wamukonya, N., Zhang, X., 2007: Energy Supply. In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of

the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, UK and New York, NY, USA.

Sovacool, B.K. (2009). Contextualizing avian mortality: A preliminary appraisal of bird and bat fatalities from wind, fossil-fuel, and nuclear electricity, *Energy Policy*, 37: 2241-2248.

Strauss, A. and Corbin, J., (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage Publications.

Swofford, J. and Slattery, M. (2010). Public attitudes of wind energy in Texas: Local communities in close proximity to wind farms and their effect on decision-making. *Energy Policy*, 38(5): 2508-2519.

Toke, D. (2002). Wind power in the UK and Denmark: can rational choice help explain different outcomes? *Environmental Politics*, 11: 83-100.

Toke, D. (2005). Explaining wind power planning outcomes: Some findings from a study in England and Wales. *Energy Policy*, 33(12): 1527-1539.

Toronto Hydro Corporation. (2010). *About Toronto Hydro Corporation*. Retrieved October 23, 2009 from <http://corporate.torontohydro.com/affiliates/index.html>

Toronto Hydro Energy Services. (2009). *Offshore Wind Anemometer*. Retrieved January 4, 2009 from http://www.torontohydroenergy.com/generation_offshore.html

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: 2705-2714.

Vittes, M.E., Pollock III, P.H., and Lillie, S.A. (1993). Factors contributing to NIMBY attitudes. *Waste Management*, 13: 125-129.

Warren, C.R., Lumsden, C., O'Dowd, S., and 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.

Wind Concerns Ontario. (2010) *About Us*. Retrieved February 10, 2010 from <http://windconcernsontario.wordpress.com/who-are-we/>

Wolsink, M. (1994). Entanglement of interests and motives: assumptions behind the NIMBY-theory on facility siting. *Urban Studies*, 31(6): 851-866.

Wolsink, M. (2000). Wind power and the NIMBY-myth: institutional capacity and the limited significance of public support. *Renewable Energy*, 21: 49-64.

Wolsink, M. (2007). Planning of renewable schemes: Deliberative and fair decision-making on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy*, 35: 2692-2704.

Woods, M. (2003), Conflicting environmental visions of the rural: Windfarm development in Mid Wales. *Sociologia Ruralis*, 43: 271–288.

World Wind Energy Association. (2009). *World Wind Energy Report 2009*. Retrieved June 8, 2010
http://www.wwindea.org/home/images/stories/worldwindenergyreport2009_s.pdf

Wustenhagen, R., Wolsink, M and Burer, M.J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35: 2683-2691.