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Owners of second homes, locals and their attitudes towards future rural wind farm

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Abstract

Wind power has been identified as one of the most promising sources of renewable energy. However, its diffusion has not been as rapid as anticipated. The objective here is to analyse attitudes towards wind power among Finnish local residents and owners of second homes. First, we assess their existing knowledge of and level of interest in energy issues and wind power. Second, we analyse potential differences in attitudes between the two stakeholder groups when it comes to wind power in general and the proposed wind farm in particular. The study draws on both quantitative survey data and qualitative interview data. One of the key findings concerns the different perceptions among locals and owners of second homes in a rural area. Both groups were interested in questions of energy production and accepted wind power in general. Nevertheless, the proposed project in Ruokolahti seemed to polarize attitudes. This paper offers new insights into attitudes to wind energy among Finnish locals and owners of second homes in the same area.

Keywords: Attitude; Second homes; Wind power

1. Introduction

Energy efficiency and renewable energy production have become major targets in many countries worldwide (Ladenburg et al., 2013; Rosenberg et al., 2013), and wind power has been identified as one of the most promising sources of renewable energy (Klick and Smith, 2010; Wang and Sun, 2012). Wind power has been strongly emphasized in Finland in recent years, and is supported through investment subsidies, information guidance offered to energy companies and consumers, and the funding of technological research (Holttinen, 2004; Varho and Tapio, 2005). However, in reality the growth has not been *“as fast as anticipated or hoped for”* (Varho and Tapio, 2005, p. 1931). The literature identifies many factors that explain the lack of adequate investment in wind energy (see e.g., Dimitropoulos and Kontoleon, 2009), including legislative efficacy and potentially mixed signals, and opposition to wind farms (see e.g., Dimitropoulos and Kontoleon, 2009; Smith Stegen and Seel, 2013).

The objective of this paper is to analyse attitudes to wind power among Finnish local residents and owners of second homes¹. Ownership of free-time residences in Finland is high: at the end of 2012 there were almost half a million of them, and 58 of the 336 municipalities had more free-time residences than permanently occupied dwellings. Free-time residences tend to be located in rural areas on the shore of a lake or by the sea (Official Statistics of Finland, 2012). This makes Finland a unique and interesting context in which to study attitudes towards rural wind farms. Thus, we focus on two stakeholder groups (owners of second homes and local residents) and analyse their attitudes towards wind power. Combining the survey and interview data we first assess the existing knowledge among these two groups, and the level of interest in energy issues and wind power. Second, we analyse the potential differences in attitudes to wind power in general and the proposed wind farm in particular. To our current knowledge, this is the first attempt to compare the acceptability of wind power in Finland among locals and owners of second homes, and to draw from both quantitative and qualitative data in this setting. There also appear to be few international studies comparing two or more stakeholder groups. The findings reported in this paper could help managers of wind farms to recognize at an early enough stage the factors that affect the wind-energy business, and policy makers may also find the study useful when contemplating policy decisions and financial incentives.

¹ The term second home means a residence for free-time and holiday use. These free-time residences (villas or summer cottages) are called second homes in this article. The owners of the free-time residences are called second home owners. Second homes have been an integral part of the Finnish rural recreational landscape since the eighteenth century (Vepsäläinen and Pitkänen, 2010).

The rest of the paper is organized as follows. The next section discusses the previous research on attitudes towards wind power. Section 3 describes the research design as well as the context of this study in detail. The results are presented and discussed in Section 4, and Section 5 concludes the paper.

2 Public attitudes towards wind power

The NIMBY (Not-In-My-Backyard) syndrome is a concept that is often related to wind power. NIMBY-motivated opponents have positive attitudes towards the application of wind power *in general* but they oppose the construction of turbines in their own neighbourhood (Wolsink, 2007). This negative relation between general and local support of wind energy tends to be attributed to people's selfish concern about personal utility. However, the NIMBY syndrome has turned out to be too simplistic an explanation of the resistance. According to Wolsink (2007, p. 1201), opposition may take following four forms of which the first one is the only true NIMBY-motivated opposition:

- i. *"A positive attitude towards the application of wind power, combined with an intention to oppose the construction of any wind power scheme in one's own neighbourhood."*
- ii. *"The not-in-any backyard variant, which means opposition to the application of the wind power in the neighborhood because the technology of wind power as such is rejected."*
- iii. *"A positive attitude towards wind farms, which turns into a negative attitude as a result of the discussion surrounding the proposed construction of a wind farm."*
- iv. *"Resistance created by the fact that some construction plans are themselves faulty, without a rejection of the technology itself."*

The existing literature also identifies a wide range of other reasons emerging from empirical research: visual impact (e.g., Devlin, 2005; Firestone and Kempton, 2007; Jones and Eiser, 2010; Hagget, 2011), questions of ownership and participation in planning and decision-making (e.g., Jobert et al., 2007; Hagget, 2011), interest in environmental issues (Ek 2005), inequality (e.g., van der Horst and Toke, 2010) and community fairness (Gross, 2007). Hagget et al. (2011) and Devine-Wright (2005, 2011) also investigated the role of place attachment in the context of attitudes towards wind power.

Although not fully explaining opposition to wind power, many previous studies report “backyard motives” as a significant factor in its social acceptance. Jones and Eiser (2010), for example, studied the gap between general attitudes to wind power and attitudes to the development of wind turbines at identified sites. They found that when the development was ‘out of sight’ it was considered on the general level, but as soon as the turbines became visible, attitudes changed. Visibility and concerns about detrimental effects on the landscape heavily influenced the endorsement of these sites. Ek (2006) has studied e.g. the preferences for off-shore wind power and more recently Ladenburg (2008, 2009, 2010) and also Aravena et al. (in press), who, found out that respondents favour (far-off) offshore wind turbines. Meyerhoff et al. (2010) found the minimum distance from wind turbines to residential areas to affect significantly on respondents’ choices. On the other hand, Devine-Wright (2005) found no apparent relationship between living in close proximity to a planning area and attitudes to wind power. Thus, it seems that the effect of distance and visibility on attitudes is not consistent.

It should also be borne in mind that attitudes towards wind power are dynamic in nature: they change in a U-shaped pattern (Wolsink 2007). People are generally positive about it when there are no real plans to build a wind farm, but attitudes turn negative when projects are announced. However, they may turn positive again once the wind farm has been built (Wolsink 2007). Fokaides et al. (2013) even found some evidence of a YIMBY (Yes in my backyard) effect in their post-construction analysis, as local residents were more favourable to the erected wind farm than those living further away. In general, situations in which a high level of general support for wind energy turns into objection to a specific project tend to provoke misunderstandings. Planners tend to see this as a gap between consumer preferences and the default acceptance of environmental innovation (Kaenzig et al. 2013). Recognition of the dynamic nature of public attitudes and giving people the opportunity to contribute to planning processes with their local viewpoints and knowledge should help to avoid such misunderstandings (Swofford and Slattery 2010).

In addition, the public should not be treated as an integrated whole in the gauging of attitudes to wind power: they belong to or represent different stakeholder groups such as inhabitants, local authorities, companies, land owners or environmental organizations, and hence could be characterized as disunited (Aitken 2010, Wüstenhagen et al. 2007). Socio-demographic variables such as income level, gender and level of education may have an effect (Ladenburg 2010, van der Horst and Toke 2010) or seem negligible (Johansson and Laike 2007). However, studies comparing different stakeholder groups appear to be rather rare. Table 1 summarizes the existing research on wind power in which two stakeholder groups are

compared. These studies comparing different demographic groups have enhanced understanding not only of the different groups and their characteristics but also of their attitudes.

Insert Table 1 about here

With regard to Finland, there have been numerous surveys to chart Finnish attitudes to energy production (e.g. Kiljunen, 2009) and some previous studies on attitudes to wind power, but they are rather general in nature. One example is the recent work of Kosenius and Ollikainen (2013), who investigated public preferences for renewable-energy technologies (wind power, hydro power and energy from crops and wood). They found regional differences, but wind power was still the most popular. Large-scale attitude surveys and polls such as these primarily give a general picture, but, as stated above, on the local level positive attitudes may turn into opposition, often because of environmental impacts such as noise or landscape effects (Krohn and Damborg, 1999).

In sum, it seems that, there is a research gap when it comes to studies comparing attitudes to wind power in two or more stakeholder groups. There is also a clear need for local-level research in Finland. Our aim in this paper is to shed more light on this research area by comparing two Finnish dwelling groups, local people and owners of second homes, and their attitudes towards a proposed rural wind-farm project in a small municipality located in South East Finland. The next section describes our research design in detail.

3. Materials and methods

We used both survey research and semi-structured interviews to analyse differences and similarities in attitudes to wind power among local residents and owners of second homes. Quantitative analysis made it possible to statistically compare various aspects that influenced attitudes, whereas qualitative methods allowed a deeper understanding of the underlying factors.

3.1 Research context

Many Finns divide their time between two places, with a home in the city and a second home in the country. Their second-home landscape tends to represent wilderness and the past, traditional rural life and leisure activities (Periäinen 2006, Vepsäläinen and Pitkänen 2010). The Finnish summer-cottage culture is taken for granted, but little is known about the attitudes of these property owners to renewable

energy. The location of the proposed wind farm in Ruokolahti in Finland thus provides an interesting context in which to study this phenomenon.

Ruokolahti is a rural municipality extending over 1,220km² located in South East Finland, 15km from the border between Finland and Russia. The permanent population of 5,577 (at the end of 2012) increases by about 3,000 owners of second homes in the summer. At the end of 2012, Ruokolahti was one of the ten Finnish municipalities with more free-time residences than permanently occupied dwellings (Official Statistics of Finland, 2012). Approximately 23 per cent of the area is covered by water, and much of the land area (77 %) is forested.

In June 2011 the municipality made the decision to start the zoning planning for a wind farm in Ruokolahti. The proposal was to erect nine wind turbines, each with a capacity of 3MW and 180m high, in an area owned by a forest company. As Figure 1 shows, local residences and second homes are situated around the planning area, mainly onshore. There is one main and several smaller roads. The grid line (solid black line in Figure 1) is in the middle of the area.

Insert Figure 1 about here

The initiator of the zoning plan was TuuliSaimaa Ltd, a wind-farm company. Three public consultation sessions were held during the process. People were invited to meetings by personal letter and newspaper announcement. The municipal officials were able to give their statements and the residents their opinions of the plan. Because of public objections, two of the total number of nine turbines were relocated to more suitable sites. The zoning plan was approved in October 2012. Five complaints addressed separate concerns about disruption to radar functions, the threat to one specific bird species (red-throated diver), insufficient planning reports and interaction with the public, contravention of provincial plans, and noise levels.

3.2 Survey data

The environmental authorities did not require Environmental Impact Assessment (EIA) of the Ruokolahti wind-farm project because of the small number of turbines. Instead, the municipal planning process was followed and the survey research was carried out during the consultation procedure. The survey comprised three sections: section 1 covered the socio-demographic background of the respondents, section 2 concerned attitudes to wind power in general, and section 3 questioned attitudes towards the

Ruokolahti project plans. The questionnaire was pre-tested three times: a link to the Webropol survey was sent to a varying group of five or 10 colleagues, the Ruokolahti municipal manager and the technical manager. Some details were revised following this final phase of the questionnaire development.

The municipal population register was used to obtain mailing information. A total of 241 survey questionnaires with cover letters (one per landowner) were mailed together with a hearing notification concerning the municipal zoning process in June 2012. The cover letter assured the respondents that confidentiality would be maintained. An Internet survey similar to the mail survey was conducted via Webropol 2.0 software. Survey questionnaires were also freely available at the municipal centre and library. The survey was advertised on the Ruokolahti web pages, the web pages of Lappeenranta University of Technology, and in the local newspaper at the beginning of August 2012. It was open from June 20 to August 10, over seven weeks altogether. Sixty-seven completed questionnaires were returned and 45 responses were received via the Internet survey. Thus, the total number of respondents was 112. Consequently, the response rate (from the mailed questionnaires) was 27 per cent. The respondents received information about the survey from the letter (61.6%, 69), the local newspaper and/or the Ruokolahti web pages (29.5%, 33), or some other source (8.9%, 10). Twelve respondents were excluded from the analysis because they were not local residents or owners of a second home in Ruokolahti. Table 2 gives the demographics of the valid respondents (n=100).

Insert Table 2 about here

As Table 2 shows, 35 per cent of the respondents were locals, and 65 per cent owned a second home. This is well in line with the information provided in Figure 1. The majority of the buildings near the proposed wind farm are second homes, thus, the higher number of owners of second homes among the respondents was to be expected.

Of the local respondents, 62.9 per cent (22) were male, 34.3 per cent (12) were female and 2.9 per cent (1) did not give their gender. The respective figures among owners of second homes were 55.4 per cent (36), 43.1 per cent (28) and 1.5 per cent (1). The differences in gender distribution between the two groups are not statistically significant (Pearson chi-square 0.354, p-value 0.552). According to Statistics Finland, 49.7 per cent of residents in Ruokolahti are male. Thus, males are somewhat over-represented in our survey. One possible explanation for this is that the questionnaires were mailed to property owners, the majority of whom are male, thus the gender distribution in the responses may reflect this disparity.

Moreover, gender bias is common in surveys concerning energy issues, as well as in survey research in rural areas (Jacobsen et al., 2007). However, gender did not appear to affect the results significantly.

The median age group of both locals and owners of second homes was 56-65 years, slightly older than the median age group of residents in Ruokolahti reported by Statistics Finland (45-56 years). Unfortunately, there are no official data available about the age distribution among owners of second homes in Ruokolahti. The differences in age-group distribution between the two groups were not statistically significant (Fisher's exact test p-value 0.653).

As Table 2 shows, the majority of the respondents owning properties near the proposed wind farm used them as second homes: among the owners of second homes, 81.5 per cent (53) estimated the distance between their property and the proposed wind farm at less than two kilometres, 16.9 per cent (11) at over two kilometres, and 1.5 per cent (1) did not identify the distance. The respective figures among the local residents were 54.3 per cent (19), 42.9 per cent and 2.9 per cent (1). The differences in distance distribution between locals and owners of second homes were statistically significant at the one-per-cent level (Pearson's chi-square 6.938, p-value 0.008). As discussed in Section 2, Wolsink (2007), for example, suggests, NIMBYism is too simplistic an explanation of opposition to wind farms. However, given the possibility that distance had an impact on attitudes towards the proposed wind farm, its role is taken into account in the analyses.

Various non-parametric tests were used to identify possible differences between locals and owners of second homes. Cross-tabulation was used to analyse differences in background knowledge, attitudes towards different forms of energy production, and attitudes towards wind power in general and to the construction of the wind farm in Ruokolahti. Pearson's chi-square test or Fisher's exact test was used to assess the statistical significance of the observed differences between locals and owners of second homes: Fisher's exact test was used if the proportion of cells with an expected cell frequency of less than five exceeded 20 per cent. The Mann-Whitney U-test was used to analyse the differences in the potential effects of the proposed wind farm in Ruokolahti. The distance between the property (permanent residence or second home) and the location of the proposed wind farm was controlled, and "I don't know" responses were filtered out before the analyses.

3.3 Interview data

The qualitative research material consists of semi-structured interviews as well as the open-ended responses in the questionnaire. Interviews were held with a total of 14 individuals representing locals (3), owners of second homes (7), corporate interests (2) and municipal politicians and officials (2). The interviewee selection was based on the demographics in the study area on the one hand, and the purpose of the interviews on the other. Because it was clear from the first part of the study that the majority of properties near the proposed wind farm were second homes, whose owners thus comprised the majority of the survey respondents, a higher number of these property owners received an invitation to be interviewed. The purpose of the interviews was to deepen the interpretation of the survey results. Nevertheless, the survey was the main instrument, and the interviews were intended to shed more light on the findings. Representatives of corporate and municipal interests enlarged the study context and helped in identifying the characteristics of the two dwelling groups under scrutiny. The interviews were conducted during the spring and summer of 2013. All the interviewees were asked questions related to the following six themes: 1) Attitudes (impact of wind power at the siting area, social acceptance – whose acceptance counts); 2) Ownership and fairness (property prices, who suffers, who benefits economically); 3) Everyday activism (personal actions and experiences of activism); 4) Interaction (successfulness of interaction between different stakeholders); 5) Knowledge (sufficiency and source of information, the use of knowledge); and 6) Tolerance (fears, health effects, personal tolerance of nuisance). Future expectations of wind power were also discussed.

The interviewees were able to talk about wind power in general and the Ruokolahti project in particular. The interviews lasted an average of one hour each, and they were recorded and transcribed verbatim. The texts were then coded by means of Atlas.ti software version 7.0.92. In creating the codes the researchers read the material and identified the points at which the interviewees talked about the environment and the landscape. Responses concerning the juxtaposition of local people and owners of second homes were also of great interest in terms of shedding light on the factors behind the different attitudes to wind power.

4 Results and discussion

As discussed above, the objective of our study was to compare and analyse attitudes and expectations among owners of second homes and local residents in connection with the proposed wind farm in Ruokolahti. In pursuance of this goal we asked several questions concerning 1) existing knowledge and level of interest when it comes to wind power and energy issues, 2) attitudes towards wind power and other forms of energy production, and 3) attitudes towards the proposed wind farm in Ruokolahti. The results emerging from the survey research and the interview data are analysed and discussed concurrently in the following sub-sections.

4.1 Existing knowledge and level of interest

Overall, the majority of the respondents reported being very interested in energy issues. As Table 3 shows, in response to the question, “To what extent are you interested in energy issues?” 61.1% of locals living near the proposed wind farm (distance < 2km) responded, “To a great extent”, compared to 38.5 per cent among owners of second homes. Conversely, more owners of second homes (57.7%) than permanent residents (38.9%) responded “To some extent”. However, the differences between the groups are not statistically significant (Fisher’s exact test p-value 0.220). Among respondents living further from the proposed wind farm (distance > 2km) the percentages were almost equal between the groups: 72.7% of owners of those with a second home responded “To a great extent” and 27.3% respondent “To some extent” compared to 66.7% and 33.3% among locals. Thus, the differences between the groups are not statistically significant (Fisher’s exact test p-value 1.000).

Insert Table 3 about here

More owners of second homes (41.2%) than locals (27.8%) living near the proposed wind farm responded “Yes” in response to the question “Have you visited a wind farm or at the vicinity of about 100 meters tall wind turbine?” (see Table 3). Similarly, a somewhat more owners of second homes (72.7%) than locals (60.0%) living more than two kilometres from the proposed wind farm responded “Yes”. However, the differences between the groups are not statistically significant. Hence, it seems that, on average, there were no differences between locals and owners of second homes in terms of knowledge about the appearance of large-scale wind turbines. There were no statistically significant differences with regard to seeking information about wind power in general either (see Table 3): a majority of both locals (77.8%)

and owners of second homes (63.5%) living less than two kilometres from the proposed wind farm have actively sought for information. Among respondents living further from the proposed wind farm, more locals (60.0%) than owners of second homes (27.3%) have sought for information. However, the difference is not statistically significant (Pearson Chi-square p-value 0.209). The interviewees also reflected on the questions about knowledge. As one owner of a second home said:

“Yes, there is enough information available about wind power, facts like how it works and what it is. Certainly, a lot of information is available. This project is a case apart, how it’s proceeding.”²

Owners of second homes appear to be keener to attend information sessions about the construction of wind-power plants: In total, 39.7 per cent (25 respondents) as opposed to 18.8 per cent (6 respondents) of the locals had been to such meetings. Controlling for distance (see Table 3) emphasizes the difference: only 11.8 per cent of locals living less than two kilometres from the proposed wind farm responded “Yes” to the question, “Have you attended information sessions about the construction of wind-power plants in Ruokolahti?”, as opposed to 40.4 per cent of those with a second home. The difference between the two ownership groups is significant at the 10 per cent significance level (Pearson chi-square p-value 0.061; see Table 3), but vanishes when the distance between the property and the proposed wind farm is over two kilometres. All in all, it appears that locals and owners of second homes have quite similar levels of knowledge about wind power in general, although the latter have been more active in seeking information about the local wind-farm project.

The interviewees in the two groups gave their views on the state of knowledge in the other group. Some locals criticized the understanding of rural matters among people with a second home, who speak about the wilderness when they mean the growing forest. As one of the locals said in an interview:

“This is not a wilderness, these forests are grown for economic purposes.”

Owners of second homes, in turn, were sceptical about the locals’ knowledge of wind power and the possibility of opposing the plans. As one interviewee said:

² The survey and interviews were conducted in Finnish and the author translated the citations into English.

“It’s wrong that these locals get the disadvantages but not the benefits. This is the case in developing countries as well. This is colonialism.... Locals are elderly, lonely people. They are not able to defend themselves. Just take our local neighbours: they can’t protest as loudly as I can.”

4.2 Attitudes towards different forms of energy production

In order to gauge their attitudes towards the various alternatives, and wind power in particular, we asked the respondents two questions: 1) “What is the most favourable form of energy production in the future?” and 2) “What is your attitude towards wind power (in general)?”

As Table 4 shows, solar power was by far the most attractive energy form among the respondents (41.4% of the locals and 31.6% of those owning a second home). The locals put wind power in second place (24.1%), bioenergy in third (20.7%) and hydropower in fourth (10.3%); only 3.4 per cent of them chose the “Nuclear power” or “Fossil fuels” option. The corresponding percentages among the owners of second homes owners were 21.1 (hydropower), 17.5 (bioenergy), 15.8 (nuclear power or fossil fuels) and 14.0 (wind power). Thus, locals appear to favour wind energy more strongly than owners of second homes whereas the latter prefer hydropower and even nuclear power and fossil fuels to wind power. As regards to favourability of wind power, the difference between the locals and the owners of second homes is even larger if the distance is less than two kilometres but vanishes when the distance between the property and the proposed wind farm is over two kilometres (see Table 4). However, the differences in the attractiveness of energy forms are not statistically significant at the five per cent significance level (< 2km: Fisher’s exact test p-value 0.3793; > 2km: Fisher’s exact test p-value 0.3793).

Insert Table 4 about here

The interviewees compared nuclear power and wind power, revealing polarized attitudes to nuclear power in their discourse. Some of them regarded wind power as a counter force to nuclear power. As one of the locals said:

“I have thought that even if it [the wind farm] was close enough to disrupt my life badly, I would still accept it and prefer it to nuclear power. So, I’m dealing with this mentally.”

Many of our interviewees shared the perception that nuclear power was necessary to ensure sufficient energy supply. Those owning second homes in particular considered both sides of argument, which confirms the survey results: they felt it was not unambiguous. As one of them said:

“Energy is big business. The climate change in the background promotes renewables. Personally I support nuclear power rather than wind power.”

In addition to eliciting comparisons with other forms of energy production, we also asked the respondents about their attitudes towards wind power in particular. As Figure 2 shows, 88.9 per cent of the locals, and about 66.0 per cent of those owning a second home living in close proximity to the proposed wind farm felt “Positive”: the corresponding percentages at a distance of over two kilometres were 66.7 and 90.9 (see Figure 3). The differences between the two groups were not statistically significant in either case (<2km: Fisher’s exact test p-value 0.241; >2km: Fisher’s exact test p-value 0.457). Thus locals and owners of second homes share positive attitudes when it comes to wind power in general.

Insert Figures 2 and 3 about here

4.3 Attitudes towards the proposed wind farm in Ruokolahti

Attitudes to the proposed wind-farm project in Ruokolahti seemed to be more polarized than attitudes towards wind power in general. Almost all of the locals (94.4%) living in close proximity to the proposed wind farm were in favour of the project, whereas the owners of second homes were split in their opinions: 57.7 per cent of them (distance < 2km) responded “Negative” and 38.5 per cent responded “Positive” to the question, “What is your attitude towards the construction of a wind farm in Ruokolahti?” (see Figure 4) The difference between the two is highly significant in this case (Fisher’s exact test p-value 0.0001). Interestingly enough, this difference completely disappears at a distance of over two kilometres (see Figure 5).

Insert Figures 4 and 5 about here

The interview data confirmed the typical positive opinion among locals. One of them said:

“I’m neither a wind-power enthusiast nor an opponent because we need electricity and it [wind power] is a very natural alternative.”

The interviewees with second homes, on the other hand, considered wind energy positively but only *in principle*: they all reacted negatively to the published plans concerning Ruokolahti. The energy perceptions of the latter group may reflect the NIMBY syndrome (Wolsink, 2007): the gap between general support for an energy source and support for a plant in one's own community. Supporting nuclear power in this case meant that energy production would be geographically far away, not in their own backyard as would be the planned wind turbines. One owner of a second home we interviewed showed an awareness of NIMBY attitudes:

"This is the hard core of the whole issue: the Not-In-My-Backyard syndrome. Wind power is OK if it is not generated in my backyard. I confess that this is how I think. Damned good as long as I don't have to suffer in any way."

Some of them even blamed the EU and its unreasonable targets for wind-energy production. One of them did realize the complexity, however. Wind-energy production is new in Finland and there is a lack of experience and operational models. Despite its sustainable production of energy, wind power has problems, as this interviewee explained:

"One is the aesthetics and therefore the conditions in the vicinity. The other is economics, since all energy production needs large investments that are defrayed by taxes. And for the taxpayer wind energy is the most expensive as the energy efficiency is so low. It is an expensive way to produce energy. And another thing is that wind power can never be the only energy source: it depends on the weather conditions."

The respondents were also asked six questions about their expectations concerning the impact of the proposed wind farm on Ruokolahti. As Table 5 indicates, at distances of less than two kilometres there were clear differences between the two groups. To be more precise, the owners of second homes living in close proximity to the proposed site were significantly more negative in their expectations than the permanent residents of Ruokolahti. For example, 76.5 per cent of the locals responded "No effect" and 65.2 per cent of those with a second home responded "Negatively" to the question "...how will the construction of wind-power plants affect property values in Ruokolahti?". The corresponding percentages of positive responses concerning the expected economic effect of the wind farm were 66.7% (locals) and 32.5% (owners of second homes). Local people had some expectations concerning the potential for new business, such as road maintenance. Private landowners could also benefit from tenancies. One of the locals was happy with the idea of obtaining electricity from nearby and was wondering if the price might even go down. Feed-in-tariffs did not concern the locals given that the taxes they pay benefit their own area. One of them also mentioned the possibility of forming partnerships with wind-energy companies.

Insert Table 5 about here

On the subject of the landscape the differences of opinion between the two groups of respondents were striking. Only 13.3 per cent of the locals living less than two kilometres from the proposed wind farm but as many as 70.8 per cent of those with a second home expected the Ruokolahti landscape to deteriorate if the wind farm was constructed. The two interviewees representing corporate interests considered the situation as outsiders:

"...To some people it [wind power] is an irrelevant issue, a few others protest because the landscape will be ruined. I suppose there are not many people who would be happy to see wind turbines. You either oppose them strongly or you ignore them: very few are actually happy."

The other corporate representative said:

"You can't own the landscape... as a starting point, the landscape is changing all the time, because of human influence or without it."

The trend continued with the last three questions: a significantly larger percentage of the locals living near the proposed wind farm expected Ruokolahti and its image to develop positively and tourism to increase.

A municipal politician summarized the situation thus:

"I feel that people coming from a distance, from a metropolitan area for example, are the most concerned. They own second homes, and don't live here permanently. These people are the loudest critics. They have been very active in this. I 'm not sure about the reasons. I suppose they, coming from their busy every-day-life, decided to buy a second home because of the peaceful and wild nature of the area. And now they feel that wind power and turbines conflict with these values."

As with the attitudes towards the proposed wind farm, the differences between the locals and the owners of second homes disappeared at distances of over two kilometres. Quite interestingly, it also seems that locals living further away from the area are stronger in their opinions, i.e. they responded more often "strongly agree" or "strongly disagree" compared to locals living in close proximity.

Both the interviewees and the survey respondents described their mental image of Ruokolahti. This image discourse emerged especially when people were evaluating the future consequences of wind-power construction, and the costs and benefits of the proposed Ruokolahti wind farm. The survey respondents mentioned place image, which we define in this paper as people's perceptions and evaluations of Ruokolahti (see also Zimmerbauer 2008) (Table 6).

Insert Table 6 about here

The current image profile of the place was positive. A few of those with a second home spent a while in the interview talking about their roots and how they came to own a second home in Ruokolahti. They wanted to explain their relationship with the place. One of them said:

“I was born in this village. Hence, mentally we are very strongly residents even though we are owners of a second home. And we stand for this place, always!”

According to the survey respondents, the building of wind turbines would damage this good image, or create a totally new one. Local interviewees spoke about the rural-urban confrontation, suggesting that those with second homes envisioned an idyll that locals did not see: a pastoral rural place, where nothing is allowed to change. Wind-power plans offended these perceptions. One of them remarked in the interview:

“Owners of second homes want to live in a cocoon. But they also have electricity! They are interested in their own wellbeing. Nowadays people don’t see the big picture. You care about your neighbours as well.”

As outsiders, the municipal officer and the politician had similar perceptions of the perspective of those with second homes as the locals. As the municipal officer said in the interview:

“The greatest conflict arises from their thinking that Ruokolahti is a place for holidays; a small place that cannot change. It’s the same when trees are felled. My forest has disappeared!”

One of the interviewees with a second home described the meaning of free time as “untouched”, meaning that people are in their own natural place and environment. They want to do relaxing things, in their preferred environment and landscape. They may live in built-up areas because of their work or other responsibilities, but would prefer to spend their free time in rural areas. One of them described a personal relationship with Ruokolahti:

“Here I’m only seeking a peaceful place in which to spend my free time. Hence, I have no interest in local politics. In my view, Ruokolahti is being short sighted in planning this [wind power]. There will be no benefits to the community, despite the property taxes over the years, and a lot trouble for owners of second homes”.

5 Conclusions

The key objective in this paper was to compare and analyse attitudes and expectations among owners of second homes and local residents concerning the proposed wind farm in Ruokolahti. We also wanted to assess existing levels of knowledge of and interest in issues to do with wind power and energy, as well as

attitudes towards wind power and other forms of energy production. The study drew from both survey research and semi-structured interviews.

Our results imply that locals and owners of second homes have quite similar levels of existing knowledge about wind power in general. Solar power was considered by far the most favourable energy form in both stakeholder groups. With regard to wind power, the locals ranked it second, whereas those with a second home considered it the least favourable option. However, when asked about wind power in general, members of both groups expressed positive views. The proposed wind-farm project in Ruokolahti, on the other hand, provoked more polarized responses. It seems that locals tend to fall into the YIMBY category whereas the majority of those with a second home appear to reflect NIMBY attitudes.

Distance from the proposed wind farm seemed to affect the respondents' attitudes. In sum, those with a second home in close proximity to the proposed site seemed to have more negative expectations of the impact on Ruokolahti (for example on the Ruokolahti image, landscape, tourism, the economy and property values) than the locals. The most striking differences between the two groups concerned perceptions of the landscape: only slightly over 10 per cent of the locals but the vast majority of those with a second home expected the Ruokolahti landscape to be ruined if the wind farm were to be constructed.

Our results are in line with those of Devine-Wright (2005), Jones and Eiser (2010), Ladenburg (2008, 2009, 2010) and Meyerhoff et. al (2010) for example, suggesting that distance affects how stakeholders accept wind-power plans. We also found that stakeholders have different views and expectations of the rural landscape, depending on whether they live there permanently or only in their free time: this is also congruent with Bergmann et al. (2006, 2008). Thus, these findings further support the idea of Aitken (2010) and Wüstenhagen et al. (2007) that people are not an integrated whole. All things considered, the findings reported in this paper have clear theoretical and practical implications. On the theoretical level, the study contributes to the literature on the acceptability of wind power in introducing a new, significant stakeholder group, owners of second homes, who have been neglected in previous research. By way of a methodological implication, the research setting proved to be fruitful in that the survey analysis revealed differences between the groups in question, which we were able to discuss in more detail in the interviews, and to suggest potential underlying reasons for the differing views. The results of this study are of potential use to managers of wind farms needing to recognize early on the factors that affect the wind-energy business in rural areas, and also to policy makers contemplating policy decisions and financial incentives.

As in any research, there are some limitations to be mentioned. First, the interviews were conducted almost one year later than the survey. People could have changed their perceptions somewhat during that period. For example, they may have sought more information about wind power. As mentioned above, acceptance is time-dependent (Wolsink 2007), and this particular study represents a snapshot of one time period, having been conducted during the phase when the degree of acceptability was presumably at its lowest. Second, one could also question the generalizability of the results, which are from one country (Finland): the summer-cottage culture, where it exists, may differ from one country to another. Hence, those owning second homes in other countries may have different attitudes. Future research on wind power in particular should therefore take owners of second homes into account. It would also be interesting to repeat this study after a couple of years when the wind farm is in operation, and to find out whether attitudes still followed the recognized U-shape also in this case.

References

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

Aravena, C., Martinsson, P., Scarpa, R., In press. Does Money Talk? - The Effect of a Monetary Attribute on the Marginal Values in a Choice Experiment. *Energy Economics*, DOI: 10.1016/j.eneco.2014.02.017

Bergmann, A., Hanley, N., Wright, R., 2006. Valuing the attributes of renewable energy investments. *Energy Policy* 34, 1004-1014.

Bergmann, A., Colombo, S., Hanley, N., 2008. Rural versus urban preferences for renewable energy developments. *Ecological Economics* 65, 616-625.

Devlin, E., 2005. Factors Affecting Public Acceptance of Wind Turbines in Sweden. *Wind Engineering* 29, 503-511.

Dimitropoulos, A., Kontoleon, A., 2009. Assessing the determinants of local acceptability of wind-farm investment: A choice experiment in the Greek Aegean Islands. *Energy Policy* 37, 1842-1854.

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

Devine-Wright, P., 2011. Enhancing local distinctiveness fosters public acceptance of tidal energy: A UK case study. *Energy Policy* 39, 83-93.

Devine-Wright, P., Howes, Y., 2010. Disruption to place attachment and the protection of restorative environments: A wind energy case study. *Journal of Environmental Psychology* 30, 271–280.

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

Ek, K., 2006. Quantifying the environmental impacts of renewable energy: the case of Swedish wind power. In: Pearce, D. (Ed.), *Environmental Valuation in Developed Countries: Case Studies*. Edward Elgar, Cheltenham, pp. 181-210.

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

Fokaides, P.A., Miltiadous, I.-C., Neophytou, M.K.-A., Spyridou, L.-P., Forthcoming. Promotion of wind energy in isolated energy systems: the case of the Orites wind farm. *Clean Technologies and Environmental Policy*. DOI 10.1007/s10098-013-0642-2

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.

Hagget, C., 2011. Understanding public responses to offshore wind power. *Energy Policy* 39, 503–510.

Holttinen, H., 2004. The impact of large scale wind power production on the Nordic electricity system. VTT Publications 554, Helsinki, Finland.

Jacobson, CA., Brown, TL., Scheufele, DA., 2007. Gender-biased data in survey research regarding wildlife. *Society & Natural Resources* 20, 373–377.

Jobert, A., Laborge, P., 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, 435–451.

Jones, C.R., Eiser, J.R., 2010. Understanding 'local' opposition to wind development in the UK: How big is a backyard? *Energy Policy* 38, 3106-3117.

Kaenzig, J., Heizle, S.L., Wüstenhagen, R., 2013. What the customer wants, the customer gets? Exploring the gap between consumer preferences and default electricity products in Germany. *Energy Policy* 53, 311-322.

Kiljunen, P., 2009. Energy Attitudes of the Finns 2009. Available online from < <http://www.fsd.uta.fi/en/data/catalogue/FSD2585/>> (accessed: 10.3.2014)

Klick, H., Smith, E.R.A.N., 2010. Public understanding of and support for wind power in the United States. *Renewable Energy* 35, 1585–1591.

Kosenius, A.-K., Ollikainen, M., 2013. Valuation of environmental and societal trade-offs of renewable energy sources. *Energy Policy* 62, 1148-1156.

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

Ladenburg, J., 2008. Attitudes towards on-land and off-shore wind power development in Denmark: choice of development strategy. *Renewable Energy* 33, 111-118.

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

Ladenburg, J., 2010. Attitudes towards offshore wind farms – the role of beach visits on the demographic and attitude correlation. *Energy Policy* 38, 1297-1304.

Ladenburg, J., Termansen, M., Hasler, B., 2013. Assessing acceptability of two onshore wind power development schemes: A test of viewshed effects and the cumulative effects of wind turbines. *Energy* 54, 45–54.

Meyerhoff, J., Ohl, C., Hartje, V., 2010. Landscape externalities from onshore wind power. *Energy Policy*, 38, 82-92.

Municipality of Ruokolahti, 2012. Master plan of municipality of Ruokolahti (in Finnish).

Official Statistics of Finland (OSF), 2012. Free-time residences 2012. Buildings and Free-time Residences 2012. Available online from <http://tilastokeskus.fi/til/rakke/2012/rakke_2012_2013-05-24_kat_001_en.html> (accessed: 4.9.2013).

Periäinen, K., 2006. The summer cottage: a Dream in the Finnish forest, in: McIntyre N., Williams, D.R., McHugh, K.E. (Eds.), *Multiple Dwelling and Tourism: Negotiating Place, Home and Identity*. CAB International, United Kingdom, pp. 103-113.

Rosenberg, E., Lind, A., Aamodt Espegren, K., 2013. The impact of future energy demand on renewable energy production – Case of Norway. *Energy* 61, 419–431.

Smith Stegen, K., Seel, M., 2013. The winds of change: How wind firms assess Germany's energy transition. *Energy Policy* 61, 1481-1489.

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, 2508-2519.

van der Horst, T., Toke, D. 2010. Exploring the landscape of wind farm developments; local area characteristics and planning process outcomes in rural England. *Land Use Policy* 27, 214–221

Varho, V., Tapio, P., 2005. Wind power in Finland up to the year 2025—'soft' scenarios based on expert views. *Energy Policy* 33, 1930–1947.

Vepsäläinen, M., Pitkänen, K., 2010. Second home countryside. Representations of the rural in Finnish popular discourses. *Journal of Rural Studies* 26, 194-204.

VTT (Technical Research Centre of Finland), 2013. Wind energy statistics in Finland. Available online from <<http://www.vtt.fi/proj/windenergystatistics/?lang=en>> (accessed: 20.12.2013).

Wang, Y., Sun, T., 2012. Life cycle assessment of CO₂ emissions from wind power plants: Methodology and case studies. *Renewable Energy* 43, 30–36.

Wolsink, M., 2007. Wind power implementation: The nature of public attitudes: Equity and fairness instead of 'backyard motives'. *Renewable and Sustainable Energy Reviews* 11, 1188–1207.

Wüstenhagen, R., Wolsink, M., Bürer, M. J., 2007. Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy* 35, 2683-2691.

Zimmerbauer, K., 2008. Regional image and identity on the move (in Finnish). Doctoral Thesis, University of Helsinki, Faculty of Science, Department of Geography.

Table 1

Wind-energy research comparing attitudes among two or more stakeholder groups

<i>Study</i>	<i>Groups compared</i>	<i>Key findings</i>
Bergmann et al. 2006	Rural and urban communities, high- and low-income households	Some evidence that negative environmental impacts are more acceptable to the rural population. Rural people value wildlife benefits and reductions in air pollution more than urban people. Employment creation is a significant attribute to rural people. Income groups do not differ in their preferences towards renewable energy.
Bergmann et al., 2008	Rural and urban households	Differences in preferences between urban and rural households. Rural dwellers seemed to have higher willingness to pay for all the renewable project alternatives
Devine-Wright and Howes, 2010	Residents of two coastal towns in North Wales	Differences between each town's residents in 1) responses to the project, and 2) how opposition arises from nature/industry contradictions.
Fokaides et al., 2013	Surrounding households and households in neighboring cities	Local residents are more favorable towards wind farm than those living in neighboring cities (post-construction analysis).

Table 2

Demographics of the respondents (n=100). Frequencies are in parentheses.

Respondent group	Percent of all respondents		
Local	35% (35)		
Second home owner	65% (65)		
<i>Total</i>	<i>100% (100)</i>		
Gender	Percent of all respondents	Percent of locals	Percent of second home owners
Male	58% (58)	62.9% (22)	55.4% (36)
Female	40% (40)	34.3% (12)	43.1% (28)
No gender selected	2% (2)	2.9% (1)	1.5% (1)
<i>Total</i>	<i>100% (100)</i>	<i>100% (35)</i>	<i>100% (65)</i>
Age group	Percent of all respondents	Percent of locals	Percent of second home owners
Under 18 years	1% (1)	2.9% (1)	0% (0)
18-25 years	1% (1)	2.9% (1)	0% (0)
26-35 years	2% (2)	2.9% (1)	1.5% (1)
36-45 years	14% (14)	11.4% (4)	15.4% (10)
46-55 years	25% (25)	25.7% (9)	24.6% (16)
56-65 years	25% (25)	22.9% (8)	26.2% (17)
over 65 years	31% (31)	28.6% (10)	32.3% (21)
No age group selected	1% (1)	2.9% (1)	0% (0)
<i>Total</i>	<i>100 % (100)</i>	<i>100% (35)</i>	<i>100% (65)</i>
Distance*	Percent of all respondents (f)	Percent of locals (f)	Percent of second home owners (f)
< 2km	72% (72)	54.3% (19)	81.5% (53)
> 2km	26% (26)	42.9% (15)	16.9% (11)
No distance selected	2% (2)	2.9% (1)	1.5% (1)
<i>Total</i>	<i>100% (100)</i>	<i>100% (35)</i>	<i>100% (65)</i>

*Distance between the property and the proposed wind farm

Table 3

Differences between locals and owners of second homes in their existing knowledge and level of interest about energy issues

<i>Level of interest (energy issues in general)</i>	<i>Distance^a</i>	<i>Group^b</i>	<i>Not at all n (%)</i>	<i>Very little n (%)</i>	<i>To some extent n (%)</i>	<i>To a great extent n (%)</i>	<i>Pearson Chi- Square^{c,d}</i>	<i>df</i>	<i>Fisher's exact</i>	
									<i>test^c,</i>	<i>p-value</i>
									<i>Table prob.</i>	
To what extent you are interested in energy issues?	<2km	L	0 (0.0%)	0 (0.0%)	7 (38.9%)	11 (61.1%)			0.0376	0.220
		S	0 (0.0%)	2 (3.8%)	30 (57.7%)	20 (38.5%)				
	>2km	L	0 (0.0%)	0 (0.0%)	5 (33.3%)	10 (66.7%)			0.3172	1.000
		S	0 (0.0%)	0 (0.0%)	3 (27.3%)	8 (72.7%)				
<i>Background knowledge about the wind power</i>	<i>Distance^a</i>	<i>Group^b</i>	<i>Yes n (%)</i>	<i>No n (%)</i>			<i>Pearson Chi- Square^{c,d}</i>	<i>df</i>	<i>Fisher's exact</i>	
									<i>Table prob.</i>	<i>p-value</i>
Have you visited a wind farm or at the vicinity of about 100m tall wind turbine?	<2km	L	5 (27.8%)	13 (72.2%)			0.572	1	0.468	
		S	21 (41.2%)	30 (58.8%)						
	>2km	L	9 (60.0%)	6 (40.0%)			0.2643	0.683		
		S	8 (72.7%)	3 (27.3%)						
Have you sought for information about wind power actively?	<2km	L	14 (77.8%)	4 (22.2%)			0.678	1	0.410	
		S	33 (63.5%)	19 (36.5%)						
	>2km	L	9 (60.0%)	6 (40.0%)			1.577	1	0.209	
		S	3 (27.3%)	8 (72.7%)						
Have you participated in information sessions about the construction of wind power plants in Ruokolahti?	<2km	L	2 (11.8%)	15 (88.2%)			3.522	1	0.061*	
		S	21 (40.4%)	31 (59.6%)						
	>2km	L	4 (26.7%)	11 (73.3%)			0.2883	0.683		
		S	4 (36.4%)	7 (63.6%)						

^a Distance between the property and the proposed wind farm

^b L = local, S = owner of second home

^c Null hypothesis: No-difference between locals and second home owners

^d Continuity correction if 2x2 table

*p<0.1, **p<0.05, ***p<0.01

Table 4

Number of responses and percentages to measure attitudes towards different forms of energy production in the future.

<i>Question: In your opinion, what is the most favourable form of energy production in the future?</i>					
	Solar power	Wind power	Hydropower	Nuclear power or fossil fuels ^b	Bioenergy
<u>All respondents</u>					
Local	12 (41.4%)	7 (24.1%)	3 (10.3%)	1 (3.4%)	6 (20.7%)
Owner of second home	18 (31.6%)	8 (14.0%)	12 (21.1%)	9 (15.8%)	10 (17.5%)
<u>Distance^a < 2km</u>					
Local	5 (33.3%)	5 (33.3%)	1 (6.7%)	1 (6.7%)	3 (20.0%)
Owner of second home	14 (30.4%)	6 (13.0%)	10 (21.7%)	7 (15.2%)	9 (19.6%)
<u>Distance^a > 2km</u>					
Local	7 (50.0%)	2 (14.3%)	2 (14.3%)	0 (0.0%)	3 (21.4%)
Owner of second home	4 (36.4%)	2 (18.2%)	2 (18.2%)	2 (13.1%)	1 (19.7%)

^a Distance between the property and the proposed wind farm

^b Categories "Nuclear power" and "Fossil fuels" were combined before analysis

Table 5

Mann-Whitney U-tests to analyse differences between locals and second home owners in expected effects of proposed wind farm on Ruokolahti.

<i>Questions</i>	<i>Distance^a</i>	<i>Group^b</i>	<i>Negatively n (%)</i>	<i>No effect n (%)</i>	<i>Positively n (%)</i>	<i>Mann-Whitney U-test^c, Z</i>	<i>p-value</i>						
In your opinion, how the construction of wind power plants would affect the property values in Ruokolahti?	<2km	L	3 (17.6%)	13 (76.5%)	1 (5.9%)	-3.022	0.003**						
		S	30 (65.2%)	13 (28.3%)	3 (6.5%)								
	>2km	L	7 (50.0%)	2 (28.6%)	3 (21.4%)			-0.331	0.740				
		S	5 (45.5%)	6 (54.5%)	0 (0.0%)								
In your opinion, how the construction of wind power plants would affect the economy of Ruokolahti?	<2km	L	1 (6.7%)	4 (26.7%)	10 (66.7%)	-2.156	0.031**						
		S	6 (15.0%)	21 (52.5%)	13 (32.5%)								
	>2km	L	5 (35.7%)	3 (21.4%)	6 (42.9%)			-0.468	0.640				
		S	4 (40.0%)	3 (30.0%)	3 (30.0%)								
In your opinion, how the construction of wind power plants would affect Ruokolahti landscape ?	<2km	L	2 (13.3%)	11 (73.3%)	2 (13.3%)	-3.704	0.000***						
		S	34 (70.8%)	11 (22.9%)	3 (6.3%)								
	>2km	L	8 (61.5%)	3 (23.1%)	2 (15.4%)			-0.675	0.500				
		S	5 (45.5%)	4 (36.4%)	2 (18.2%)								
In your opinion, how the construction of wind power plants would affect Ruokolahti?	<2km	L	1 (6.3%)	0 (0.0%)	10 (62.5%)	5 (31.3%)	-3.233	0.001**					
		S	15 (34.9%)	10 (23.3%)	13 (30.2%)	5 (11.6%)							
	>2km	L	4 (28.6%)	3 (21.4%)	1 (7.1%)	6 (42.9%)			-1.077	0.281			
		S	5 (50.0%)	1 (10.0%)	2 (20.0%)	2 (20.0%)							
	- Ruokolahti would develop positively.	<2km	L	1 (6.3%)	1 (6.3%)	9 (56.3%)			5 (31.3%)	-3.201	0.001**		
			S	18 (42.9%)	8 (19.0%)	11 (26.2%)			5 (11.9%)				
		>2km	L	2 (14.3%)	5 (35.7%)	2 (14.3%)			5 (35.7%)			-0.784	0.433
			S	3 (33.3%)	2 (22.2%)	2 (22.2%)			2 (22.2%)				
	- The image of Ruokolahti would be more positive.	<2km	L	2 (18.2%)	2 (18.2%)	5 (45.5%)			2 (18.2%)	-3.057	0.002**		

		S	21 (52.5%)	14 (35.0%)	5 (12.5%)	0 (0.0%)			
-	There would be an increase in tourism in Ruokolahti.	>2km	L	5 (45.5%)	2 (18.2%)	1 (9.1%)	3 (27.3%)	-1.053	0.292
			S	5 (71.4%)	1 (14.3%)	0 (0.0%)	1 (14.3%)		

^a Distance between the property and the proposed wind farm

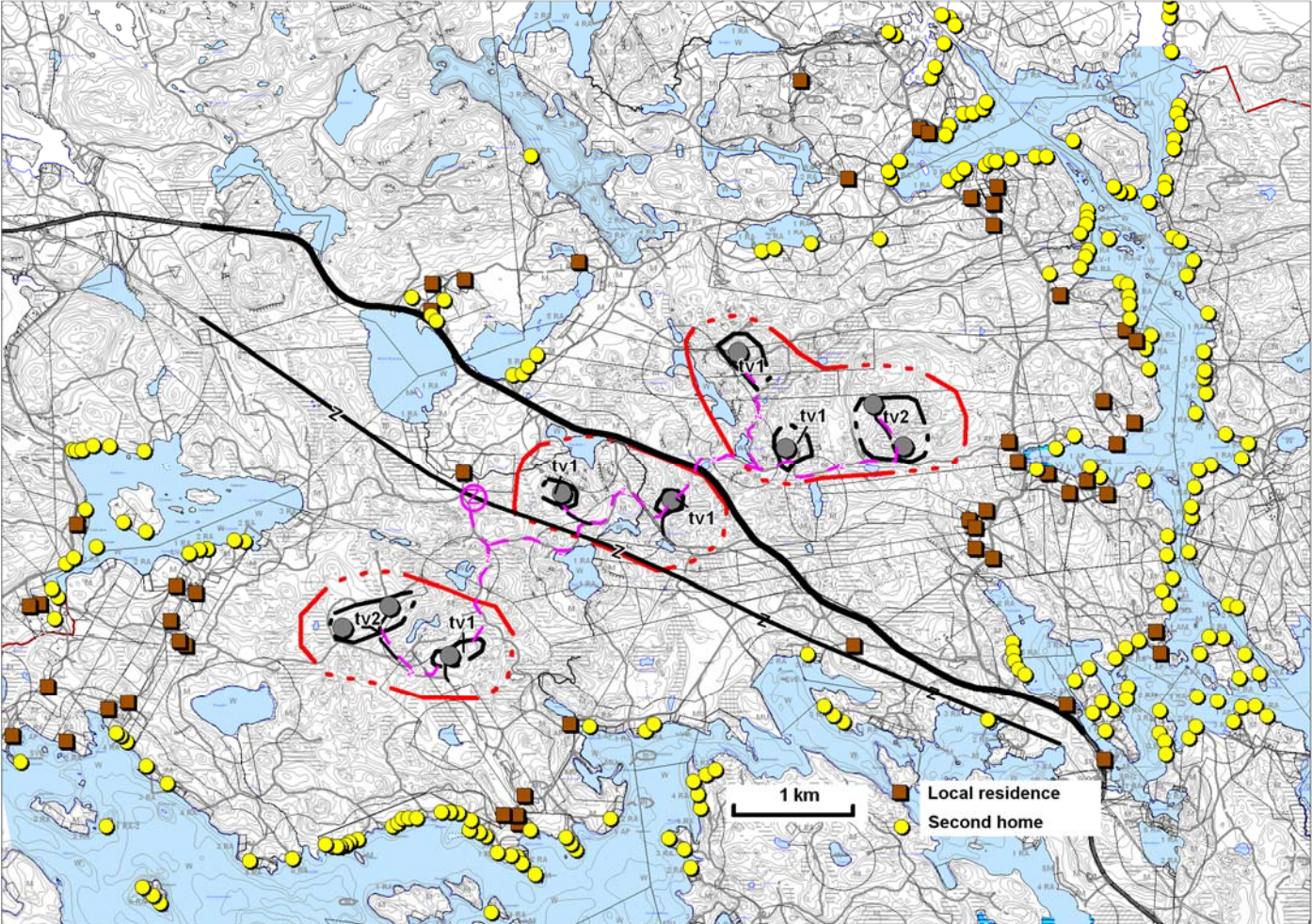
^b L = local, S = second home owner

^c Null hypothesis: No-difference between locals and second home owners

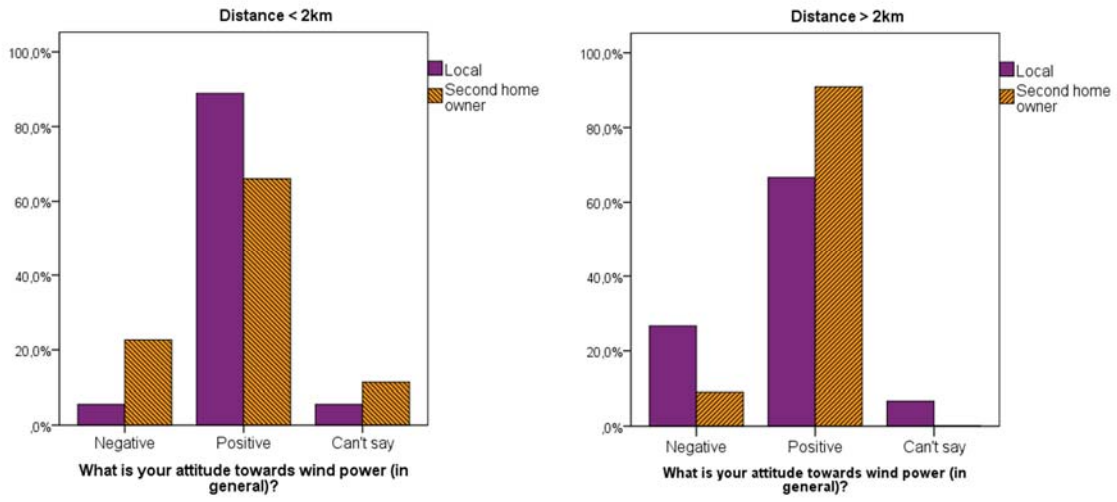
*p<0.1, **p<0.05, ***p<0.01

Figure 1 The planning area of the proposed wind farm (Municipality of Ruokolahdi)

Second homes are marked with yellow circles and local residences are marked with brown squares. Wind turbines are marked with grey circles and text "tv".



Figures 2 and 3 Attitudes towards wind power in general. Left: distance <2km. Right: distance > 2km.



Figures 4 and 5 Attitudes towards proposed wind farm in Ruokolahti. Left: distance <2km. Right: distance > 2km.

