

# PERCEPTIONS OF THE IMPACT OF WIND ENERGY GENERATION IN COASTAL COMMUNITIES

## *Trust and Fairness Issues*

*prepared by the msu land policy institute and the great lakes commission*

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### Introduction

Wind energy can summon strong responses from community residents, whether or not a wind farm has been proposed. Qualifying the reasons for these reactions involves a look into what wind represents for different people in different places.

For some, wind energy means energy security and independence, cleaner air, cleaner water, slowing the effects of climate change or an economic development opportunity. For others wind power developments represent a dramatic change to a community and an industrial incursion into rural landscapes. This may include a change in property values, environmental risks, impaired aesthetics and even a change to a community's identity.

The challenge to objectively considering wind development is in finding the balance between the concerns and anxieties of a community and the benefits they would receive. The way the current system operates, most of the intended benefits of wind energy are felt at the state or national level—jobs may be created throughout a state, or the country may become less reliable on non-renewable sources of energy. Local benefits, including new jobs, a cleaner environment and steadier energy prices, are tempered by real or perceived negative effects of wind. Finding ways to balance the risks and rewards of wind energy is essential. As with all potentially controversial issues, it may not be possible to reach consensus on wind energy, but exploring the issues in depth with a community can help educate those community members who may not have yet formed an opinion on wind power.



In early 2010, the Michigan State University (MSU) Land Policy Institute (LPI) sent a mail survey to 300 randomly selected households in each of the study areas (900 total surveys mailed). Three-hundred seventy-five surveys were returned for a response rate of 45%. The survey consisted of closed-end questions centered on the following themes: attitudes towards commercial wind farm development, perceived effects of wind farms, distributive and procedural fairness and general values and environmental beliefs. Most of the questions asked respondents to consider how they would feel about a commercial wind farm development in or near their community—defined as the township, village or city in coastal Michigan where they live during all or part of the year. The remainder of this factsheet focuses on the results of the survey regarding trust and fairness issues.

## Opinions of Coastal Residents

### Trust

The perception of process fairness, justice and social well-being has been shown to be a core driver of the acceptance of wind energy development in a community.<sup>1,2,3,4</sup> If the level of trust in the political process is high, then the level of trust in a development tends to be higher. Additionally, if the level of trust in a developer is high, then the level of trust in their project is higher. These concepts are seen to play a role in the broader acceptance of wind energy, particularly if the development occurs as part of a community project or by a local company. Local involvement, clear and accurate information, equity and decision-making fairness all play a role in local acceptance. Further, if the benefits of a project accumulate at different places from its negative effects, then a concern regarding exploitation arises. In other words, if the economic growth happens at the state level, and the environmental benefits accrue nationally, while the negative impacts are all felt in the local community, resentment can develop. This factsheet summarizes the opinion of the public in coastal communities regarding trust, fairness and exploitation in relation to the development of commercial wind energy.

### Fairness in Impact of Wind Farm Development on a Community

Respondents were asked a series of questions related to their opinions about fairness and the potential impacts and risks that wind farm development could have on their community. See Figure 1.

### Visual Impacts

When asked how fair they feel the visual impacts of wind farm development will be distributed, the largest percentage of respondents, 40%, say they will be neutral. The second and third largest groups indicate the impacts will be either fairly or unfairly distributed at 23% and 20% respectively. Those feeling the visual impacts of wind farm development will be a very unfair distribution make up 10% of the total survey responses, while 7% say the impacts will be very fairly allocated.

### Noise Impacts

The survey asked respondents to share how fair they feel the noise impacts of wind farm development will be distributed. Almost half,

1. Gross, C. 2007. "Community Perspectives of Wind Energy in Australia: The Application of a Justice and Community Fairness Framework to Increase Social Acceptance." *Energy Policy* 35(5): 2727–2736.

2. Jobert, A. 2007. "Local Acceptance of Wind Energy: Factors of Success Identified in French and German Case Studies." *Energy Policy* 35(2):751–760.

3. Wolsink, M. 2007. "Planning of Renewables Schemes: Deliberative and Fair Decision-Making on Landscape Issues Instead of Reproachful Accusations of Non-Cooperation." *Energy Policy* 35:2692–2704.

4. Wustenhagen, R., M. Wolsink and M. Burer. 2007. "Social Acceptance of Renewable Energy Innovation: An Introduction to the Concept." *Energy Policy* 35:2683–2691.

## Opinions of Coastal Residents (Cont.)

or 48%, say the impacts will be neutral. The next largest group of respondents, 19%, feels there will be an unfair distribution, as compared to the 18% who feel there will be a fair distribution of impacts. Finally, 8% indicate there will be a very unfair distribution of noise impacts from wind farms, while 7% feel they will be very fairly distributed.

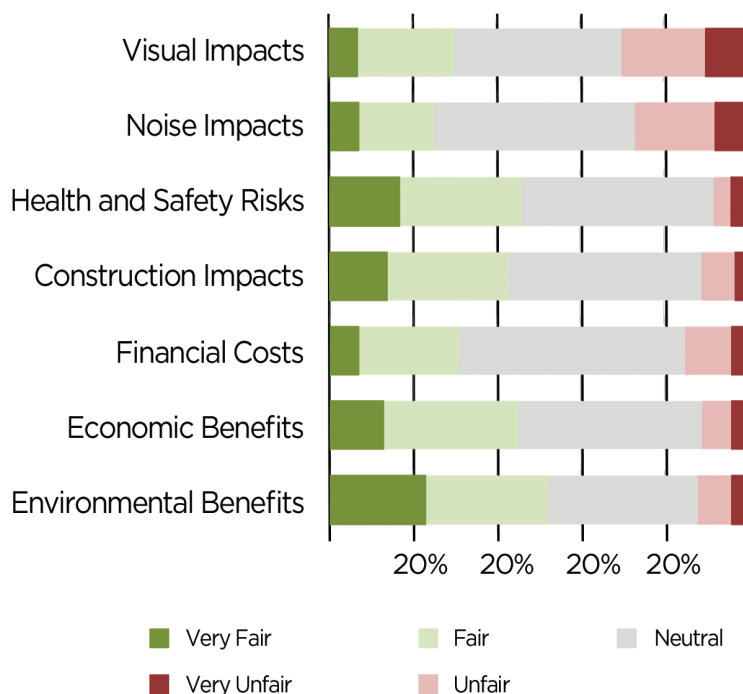
### Health and Safety Risks

Respondents were also asked how fairly the associated health and safety risks of wind farm development will be distributed. Nearly half, 46%, say the risks will be neutral. The next largest group, at 29%, says there will be a fair distribution, with an additional 27% feeling the risks will have a very fair distribution. The remaining 8% are split evenly on the associated health and safety risks of wind farm development, with 4% feeling there will be an unfair distribution and another 4% saying there will be a very unfair distribution.

### Construction Impacts

When asked to what extent construction impacts of wind farm development will be fairly distributed, nearly half of those surveyed, 46%, say the impacts will be neutral. This is followed by the segment of respondents saying the distribution will be equitable, with 29% choosing fair and 14% choosing a very fair distribution, when compared to the 8% and 3% feeling there will be an unfair and very unfair distribution of construction impacts, respectively.

Figure 1: Fairness in Distribution of Perceived Impacts of Wind Farm Development on a Community



## Opinions of Coastal Residents (Cont.)

### *Financial Costs*

When asked how fair they feel the financial cost of wind farm development will be distributed, more than half of the respondents, 54%, say it will be neither fairly nor unfairly distributed. The second largest portion of responses, 24%, feels the financial costs will be fairly distributed. Next, 11% indicate they will be unfairly distributed, with 7% that saying they will be very fairly distributed. Only 4% feel the financial cost of wind farm development will be very unfairly distributed.

### *Economic Benefits*

Survey participants were asked to what extent they feel the distribution of economic benefits from wind farms will be fair. The highest percentage of respondents, 44%, say the benefits will be neutral. Thirty-two percent say the economic benefits will be distributed fairly, while 13% feel their distribution will be very fair. Finally, 7% and 4% of respondents indicate they will have unfair and very unfair distribution of economic benefits from wind farms, respectively.

### *Environmental Benefits*

Participants were also asked to what extent they feel the environmental benefits of wind farm development will be fairly distributed. The largest percentage of responses, 36%, come from those saying this will be a neutral distribution. This is closely followed by 29% feeling it will be fairly distributed, and 23% feeling it will be very fair. Only 8% of respondents feel the environmental benefits will be unfairly distributed. Those who indicate there will be a very unfair distribution of the environmental benefits of wind farm development account for 4% of the responses.

### **Technically Sound Decision-Making**

Respondents were asked a series of questions related to their opinions about various groups and their ability to make technically sound decisions about wind farm development. See Figure 2.

### *Wind Farm Developers*

Respondents appear to be confident in the ability of wind farm developers to make technical decisions about their projects. Those who agree they will make sound decisions account for 34% of total respondents, while 32% are neutral. Those strongly agreeing match those disagreeing, at 13%. Only 8% strongly disagree that they are confident in the ability of wind farm developers to make technical decisions about their projects.

### *Environmental Groups*

When asked to what extent environmental groups will make technically sound decisions regarding commercial wind farms, the responses are more evenly distributed. The largest group belongs to those neutral

## Opinions of Coastal Residents (Cont.)

on the subject (26%), which is closely followed by those disagreeing and those agreeing, at 24% and 22%, respectively. Those saying they strongly disagree that environmental groups will make technically sound decisions regarding commercial wind farms account for 18% of the responses, with the remaining 10% indicating strong agreement.

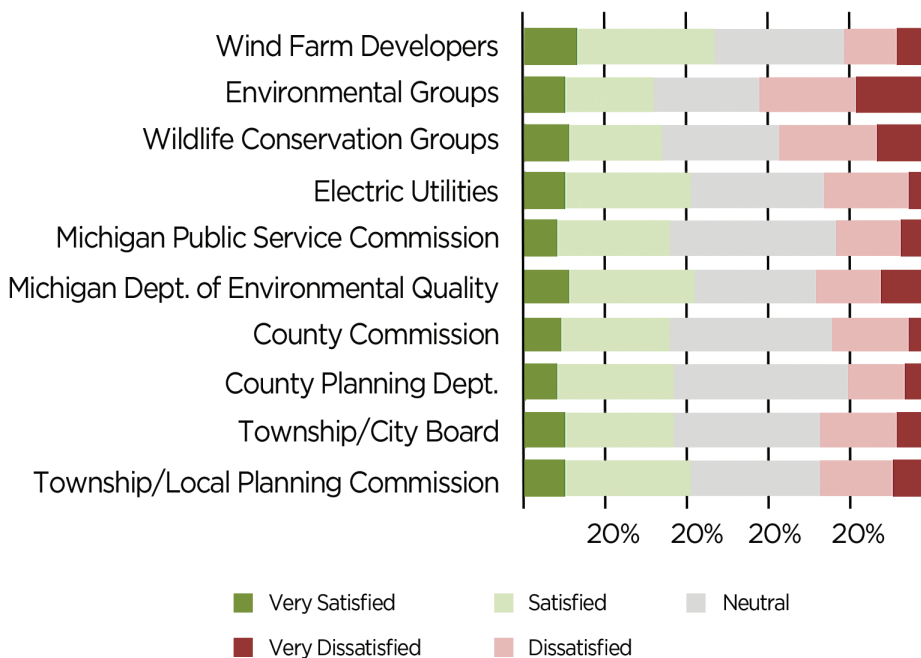
### Wildlife Conservation Groups

Participants were asked whether or not they feel wildlife conservation groups will make technically sound decisions regarding commercial wind farms. The highest percentage of respondent, 29%, are neutral. The next highest percentages come from those feeling some measure of disagreement and agreement, at 24% and 23%, respectively. Those who say they strongly disagree and strongly agree that wildlife conservation groups will make technically sound decisions regarding commercial wind farms make up 13% and 11% of the responses, respectively.

### Electric Utilities

When asked to what extent they agree that electrical utilities will make technically sound decisions about commercial wind farms, 33% are neutral on the subject. The next segment of respondents feel some level of agreement, with 31% saying they agree and 10% saying they strongly agree. Conversely, 21% say they disagree that electrical utilities will make technically sound decisions about wind farms, and 5% say they strongly disagree.

Figure 2: Perceived Ability of Groups to Make Technically Sound Decisions about Wind Farm Development





## What We Heard from Our Focus Groups About Governance and Fairness

### Information Gaps/ Remaining Questions

- Role of counties and the state in setting standards.
- Can private lands be condemned for wind farm development?
- Do citizens have a say in planning and siting?
- More assistance is needed in the development of ordinances.

## Opinions of Coastal Residents (Cont.)

### *Michigan Public Service Commission (MPSC)*

The survey asked if respondents agree that the Michigan Public Service Commission will make technically sound decisions regarding wind farm development. The highest percentage of responses come from 41% of respondents who are neutral on the subject, followed by 8% in agreement and 16% in disagreement. Those feeling very strongly in agreement or disagreement that the MPSC will make technically sound decisions regarding wind farm development are split, with 8% feeling strong agreement and 7% feeling strong disagreement.

### *Michigan Department of Environmental Quality (MDEQ)*

Respondents appear to be confident in the ability of the Michigan Department of Environmental Quality to make technical decisions about commercial wind farm development. Forty-two percent of respondents indicate some level of agreement, with 31% saying they agree and 11% saying they strongly agree. This is followed by the 30% neutral on the subject. The remaining 28% of responses come from those in disagreement (16%) and strong disagreement (12%) that the MDEQ will make technically sound decisions about commercial wind farm development.

### *County Commission*

When asked if they agree that their county commission will make technically sound decisions about wind farm development, 40% of the respondents are neutral on the subject. A total of 36% are in agreement or very strongly agree, 27% and 9%, respectively. This is followed by the 19% that disagree and 5% that strongly disagree that their county commission will make technically sound decisions about wind farms.

### *County Planning Department*

When asked to what extent they agree that county planning departments will make technically sound decisions about wind farm development, the highest percentage of respondents, 43%, are neutral on the subject. The second largest group, at 29%, indicates agreement, augmented by the 8% that strongly agree. Conversely, 14% disagree and 6% strongly disagree that county planning departments will make technically sound decisions about wind farm development.

### *Township/City Board*

Participants were asked whether or not a township or city board(s) will make technically sound decisions regarding commercial wind farms. Those indicating some level of agreement make up the highest percentage of responses, 37%, with 27% in agreement, coupled with those in strong agreement (10%). This is followed by the 36% of respondents who are neutral. The remaining portion of responses include those disagreeing (19%), along with the 8% strongly disagreeing that a township or city board(s) will make technically sound decisions about wind farms.

## Opinions of Coastal Residents (Cont.)

### Township/Local Planning Commission

Participants were asked if they agree that technically sound decisions can be made by townships or city planning commissions regarding commercial wind farms. A total of 41% of respondents agree (31%) or strongly agree (10%) they can make these types of decisions. Nearly a third, 32%, of respondents are neutral. The remaining 27% of respondents accounted for 18% in disagreement and 9% in strong disagreement that local planning commissions have the ability to make technically sound decisions about commercial wind farms.

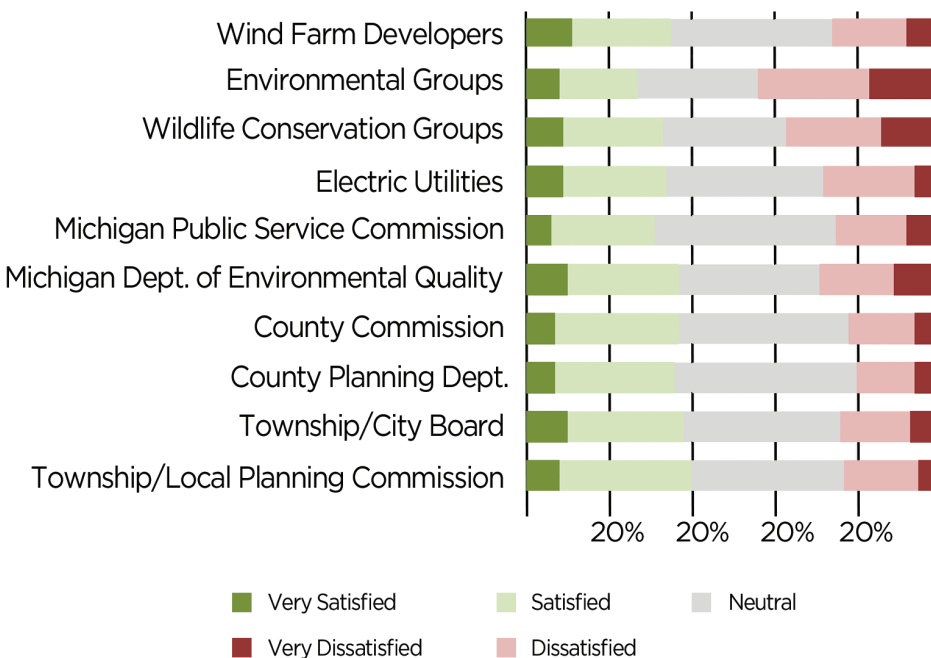
### Trust and Respect about Wind Farm Decisions

Respondents were asked a series of questions related to their opinions about their trust in wind developers, State and local government and other groups to treat everyone with respect about wind farm decisions. Responses are depicted in Figure 3.

### Wind Farm Developers

When asked if they agree wind farm developers will treat everyone with respect when making decisions about commercial wind farm development, most respondents, 39%, are neutral on the subject. This is followed by those in agreement (24%) and those in disagreement (18%). The remaining 18% of responses comes from those feeling strongly on the subject; with 11% strongly agreeing and 8% strongly disagreeing that wind farm developers will treat everyone with respect in their decision-making about wind farm development.

Figure 3: Trust in Groups to Treat Everyone With Respect about Wind Farm Decisions



## What We Heard from Our Focus Groups About Governance and Fairness (Cont.)

### Pros

- Local control via zoning authority

### Cons

- Uncontrolled development in areas that do not have ordinances
- Exploitation of communities and land owners
- Weak standards
- Inconsistent standards within counties/regions
- Development on one property might limit development on neighboring properties
- Decommissioning/removal of projects
- Lack of transparency in development

## Opinions of Coastal Residents (Cont.)

### *Environmental Groups*

The survey then asked participants how much they agree or disagree with the statement that environmental groups will treat everyone with respect in decisions relating to wind farms. The largest groups of respondents, 44%, feel some level of disagreement, with 27% disagreeing and 17% strongly disagreeing. Next, 29%, are neutral on the subject. Those feeling some level of agreement make up the last group of respondents, with 19% in agreement and only 8% in strong agreement that environmental groups will treat everyone with respect in decisions relating to wind farms.

### *Wildlife Conservation Groups*

Respondents were also asked if they agree wildlife conservation groups will treat all wind farm stakeholders with respect in their decisions. The highest percentage of respondents, 30%, are neutral on the subject. The remaining responses are split between those indicating some level of agreement and some level of disagreement, with a slight skew toward disagreement. Twenty-four percent say they agree, as compared to 23% that disagree. However, 14% feel strong disagreement, as compared to 9% feeling strong agreement about the ability of wildlife conservation groups to treat all wind farm stakeholders with respect in their decisions.

### *Electric Utilities*

The survey asked for participant's opinions on how much they agree or disagree that electric utilities will be respectful in commercial wind farm decisions. Most respondents are neutral (38%) on this subject. However, both those in agreement and disagreement are almost equal and make up almost half of respondents, with 25% agreeing and 22% disagreeing. Those in strong agreement (9%) and strong disagreement (6%) round out respondent's input about electric utilities' ability to be respectful about commercial wind farm decisions.

### *Michigan Public Service Commission*

When asked to what extent they agree the Michigan Public Service Commission will treat everyone with respect in wind farm decision-making, most respondents, 44%, are neutral on the subject. One quarter of the respondents agree, while 17% disagree. Finally, while 8% of participants strongly disagree that the MPSC will treat everyone with respect in wind farm decision-making, only 6% strongly agree.

### *Michigan Department of Environmental Quality*

When asked to what extent they agree the Michigan Department of Environmental Quality will be respectful of everyone with regard to commercial wind farm decisions, a total of 37% agree or strongly agree, 27% and 10%, respectively. About a third, 34%, are neutral on



## Opinions of Coastal Residents (Cont.)

the subject. This is followed by 18% of respondents in disagreement and 11% in strong disagreement that the MDEQ will be respectful of everyone with regard to commercial wind farm decisions.

### *County Commission*

Continuing the high percentage of responses that are neutral, 41% do not agree nor disagree that county commissions will treat everyone with respect when making decisions about wind farm development. However, a third of participants do agree that county commissions will. The next largest group makes up those in disagreement at 16%. This is followed by those respondents that strongly agree (7%) and those that strongly disagree (6%) that county commissioners will treat everyone with respect when making decisions about wind farm development.

### *County Planning Department*

The survey asked participants whether they agree that county planning departments will treat everyone with respect with regard to decision-making about the development of commercial wind farms. The highest percentage of respondents, 44%, are neutral on the subject. The second largest portion of responses, 36%, represents those feeling some level of agreement, with 29% agreeing and 7% strongly agreeing. The remaining 20% of respondents indicate some level of disagreement that county planning departments will treat everyone with respect in regards to decision-making about commercial wind farms, with 14% in disagreement and 6% that strongly disagree.

### *Township/City Board*

The survey asked participants whether they agree that township or city boards will treat everyone with respect to commercial wind farm decisions. The highest number of responses comes from those neutral on the subject and those feeling some level of agreement, at 38% each. Those in agreement (28%) were augmented by those in strong agreement (10%). The remaining 24% of responses include 17% that disagree coupled with 7% that strongly disagree that this level of government will treat everyone with respect to commercial wind farm decisions.

### *Township/Local Planning Commission*

When asked whether townships and local planning commissions will treat everyone with respect to commercial wind farm decisions, 37% are neutral on the subject. This is followed by 32% of respondents in agreement. Those in disagreement make up 18% of the total responses. The remaining 13% come from those expressing strong feelings that townships and planning commissions will treat everyone with respect to commercial wind farm decisions, with 8% in strong agreement and 5% in strong disagreement.

## Discussion

The results of the project survey shows that the public trust was not as established as it was expected to be. The current political system is designed to place significant trust in elected officials, as they make decisions that should reflect the will of the people. On all questions related to technical decision-making on trust and respect, no policy-making entity achieved 50% or higher, which could be interpreted as having the trust of the majority of respondents. Thirty to forty percent trust levels indicate low public trust and also that there will be difficulty in dealing with controversial issues by any decision-making body. Results show that few participants were confident in the ability of elected officials and public agents to make technically sound decisions about wind farms and treat everyone involved with the project with respect.

The fact that less than one third of respondents felt that different levels of government would make technically sound decisions about wind projects has a substantial effect on the way a community feels about a prospective wind development. If a community inherently mistrusts the officials who make decisions about a development, they are less likely to support the development, regardless of its merits. The results also demonstrate that of all entities involved in technical decisions, participants placed the most trust with the wind developers themselves.

When it comes to treating everyone with respect when making decisions about commercial wind developments, results showed a similarly low level of perceived respect across all groups with all percentages less than 45%. However, wind developers, wildlife groups and state-level governmental agencies have the lowest marks, while city-level and township-level planning commissions and boards received higher marks for perceived respect. Nonetheless, all groups had low levels of perceived respect, indicating problems with public engagement across all sectors.

The survey also addressed issues of equality for many aspects of wind developments. A few aspects, such as economic benefits, environmental benefits and financial costs, are believed to be more fairly distributed among the community. Noise and visual impacts, on the other hand, are believed to be unfairly distributed, and are often highly contested impacts of wind projects.

For nearly all questions asked about trust and wind energy, the majority of respondents were neutral. This could indicate many things, such as a lack of knowledge and general ambivalence to wind farms, which may indicate a need for education and outreach to increase confidence in these areas. Either way, the prevalence of neutral responses may suggest that all levels of the wind development

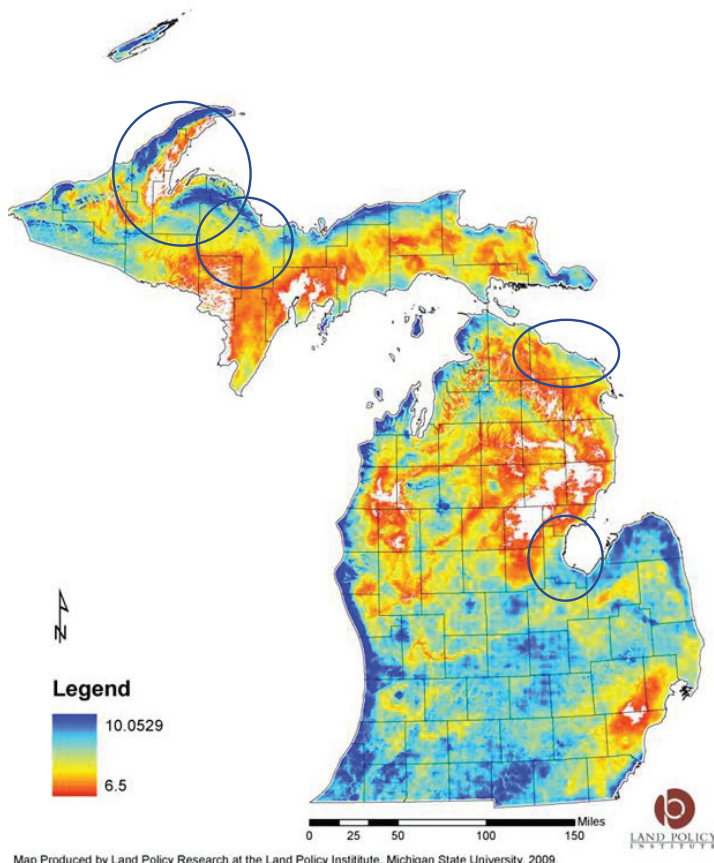
## Discussion (Cont.)

process—from governmental and public entities to utilities, developers and even environmental groups—are not involving the public in decisions as much as they should be.

## Project Description

Michigan is recognized as a state with strong wind energy development potential. Windy, coastal communities will face pressure to develop wind farms for many years to come. This factsheet is part of a Michigan Sea Grant-funded integrated assessment of wind energy in coastal communities. During 2010, the MSU Land Policy Institute hosted focus groups and surveyed residents in Michigan coastal communities to understand their perceptions of wind energy. As referenced in Figure 4, the coastal community areas selected as the focus of the study included Bay County, Presque Isle County, and a four-county area of the Upper Peninsula (Baraga, Houghton, Keweenaw and Marquette counties).

Figure 4: Map of Focus Area Communities with Wind Resource at 100 Meters (m/sec)



Map Produced by Land Policy Research at the Land Policy Institute, Michigan State University, 2009.

## Wind Farm Development in Coastal Communities Integrated Assessment Factsheet Series

1. Community Views
2. Energy Policy Priorities
3. Regulation Issues
4. Trust and Fairness Issues
5. Impact Perceptions
6. Project Overview

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## Project Description (Cont.)



Through the survey and focus groups, LPI identified the costs, benefits, consequences and optimum approaches for locating wind energy-generating facilities in Michigan coastal communities by assessing multiple factors that affect their siting. As a result, an integrated assessment tool was developed that these communities can use for creating policy and making decisions about such facilities.

The MSU Land Policy Institute partnered with the Great Lakes Commission, the Great Lakes Wind Collaborative and the MSU Environmental Science and Policy Program throughout this project. These groups also provided assistance to LPI for this project. This factsheet #WND-4 is part of the Wind Farm Development in Coastal Communities Integrated Assessment factsheet series. Results of the project will assist Michigan coastal communities with assessing multiple factors that affect the siting of wind generating facilities. Communities may use the tool for developing legally and technically sound policy and making decisions about such facilities.

For more information on this project and to view the other factsheets in this series, please visit [www.landpolicy.msu.edu](http://www.landpolicy.msu.edu) and click on the project link in the green "Check out LPI" box in the left-hand column of the site.

*Photos by John Nyberg, front cover; and Lars Sundstrom, back cover.*

