Local Impacts of Michigan’s Windfarms

IRWA Michigan Chapter 7 Meeting
May 2, 2017

Sarah Mills, PhD
What I’ll cover

• Surveys of landowners
  o Methodology
  o Individual impacts
  o Community impacts

• My advice
  o To local government officials
  o To wind developers
Utility-scale windfarms in Michigan

- 900+ turbines
  - 1,600 MW (425,000 homes)
- 8 counties
Wind Development 101

- Zoning constraints

- Landowner payments
  - Disturbance
  - Royalty
  - Participation/friendly neighbor

- Property tax payments
  - ~$20M per year statewide
Survey Data

... When, who, and where & what did I find?
2016 Community Survey

• Owners of land assessed as agricultural or residential
• 10 townships with windfarms
• 2,013 responses (53% response rate)
• Funded by C.S. Mott Foundation
2014 Farmland Survey

- All owners of land assessed for agriculture
- 14 townships
  - 9 with windfarms
  - 5 without
- 1,210 responses
  (72% response rate)
- Funded by Dow Fellowship
Things to keep in mind

• Not all respondents live in township
  o Even if they do, some live far from turbines

• Results not weighted; more populous townships more represented

• Margin of error: ±1.5%
Overall drivers of attitudes

• Type of land owned
  o secondary vs. primary residence
  o farmland / rental property only

• Being within earshot of turbines

• Direct compensation
  o Some better than none
  o $1,000 per year as key threshold
Individual-level Impacts

- Noise
- Visual
- Health
- Property value
- Farm income
- Farm succession
Individual-level Impacts

Turbines create noise pollution

- Noise
- Visual
- Health
- Property value
- Farm income
- Farm succession

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Individual-level Impacts

Turbines create visual/aesthetic problems

- Noise
- Visual
- Health
- Property value
- Farm income
- Farm succession

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Individual-level Impacts

Turbines cause human health problems

- Noise
- Visual
- **Health**
- Property value
- Farm income
- Farm succession

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Individual-level Impacts

Turbines decrease nearby property values

- Noise
- Visual
- Health
- **Property value**
- Farm income
- Farm succession

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Individual-level Impacts

Investments over 5 years: 2009-2013

- Noise
- Visual
- Health
- Property value
- Farm income
- Farm succession

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tr>
<td>Non-windfarm</td>
<td>$187k</td>
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<tr>
<td>Unpaid neighbors</td>
<td>$180k</td>
</tr>
<tr>
<td>Neighbors in pool</td>
<td>$193k</td>
</tr>
<tr>
<td>Turbines</td>
<td>$449k</td>
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- $193k is split into:
  - Home: $0
  - Outbuildings: $0
  - Drainage/Irrigation: $34k
  - Equipment: $159k

- $449k is split into:
  - Home: $98k
  - Outbuildings: $98k
  - Drainage/Irrigation: $63k
  - Equipment: $190k
Individual-level Impacts

% that have farm succession plan

- Noise: 57%
- Visual: 64%
- Health: 62%
- Property value: 80%
- Farm income: 80%
- Farm succession: 80%
Individual-level Impacts

Take-aways

- Views on noise, visual impact, property values roughly 50/50
  - Financial stake = rosier view
  - OR
  - no financial stake = more soured view

- Most don’t see health impacts

- Having turbine on property results in additional on-farm investment, succession planning
Community-level Impacts

- Job creation
- Roads
- Township services
- County services
- Schools
- Relationships with neighbors
Community-level Impacts

- Job creation
- Roads
- Township services
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Turbines create jobs

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<tr>
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Community-level Impacts

- Job creation
- Roads
- Township services
- County services
- Schools
- Relationships with neighbors

Turbines’ effect on local roads

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<td>17</td>
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</tr>
<tr>
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<td>20</td>
<td>32</td>
<td>67</td>
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<td>60</td>
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<tr>
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<td>3</td>
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<tr>
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20
Community-level Impacts

- Job creation
- Roads
- Township services
- County services

Turbines’ effect on township services

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$2.630 Million to townships in Huron County in 2015
Community-level Impacts

- Job creation
- Roads
- Township services
- County services

Turbines’ effect on county services

- Greatly improved
- Somewhat improved
- Neither
- Somewhat worsened
- Greatly worsened

$2.749 Million to county gov’t in Huron County in 2015
Community-level Impacts

- Job creation
- Roads
- Township services
- County services

$2.083 Million to ISD; $2.074 Million to local schools in Huron County in 2015

Turbines’ effect on local schools

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Community-level Impacts

- Job creation
- Roads
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Turbines’ effect on relationships with neighbors

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Community-level Impacts
Take-aways

• Most see job creation (with caveat about types of jobs)

• Majority haven’t seen changes to community services, schools, or relationships with neighbors
  o Tax uncertainty
  o Increasing cost of services may limit visible impacts
Would they welcome wind development again?

- Quality of life
- Willingness to accept new turbines
Would they welcome wind development again?

Turbines’ effect on overall quality of life in township

- Quality of life
- Willingness to accept new turbines

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- All
- Paid
- Unpaid

27
Would they welcome wind development again?

- Quality of life
- Willingness to accept new turbines

Willingness to host additional turbines in your township:

- Strongly support
- Somewhat support
- Neither
- Somewhat oppose
- Strongly oppose

<table>
<thead>
<tr>
<th>Quality of life</th>
<th>Willingness to host additional turbines in your township</th>
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</tr>
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<td>Paid: 20 (Strongly support) 20 (Somewhat support) 23 (Neither) 23 (Somewhat oppose) 10 (Strongly oppose)</td>
</tr>
<tr>
<td>Neither</td>
<td>Paid: 10 (Strongly support) 15 (Somewhat support) 10 (Neither) 10 (Somewhat oppose) 30 (Strongly oppose)</td>
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<tr>
<td>Strongly oppose</td>
<td>Paid: 21 (Strongly support) 21 (Somewhat support) 21 (Neither) 21 (Somewhat oppose) 21 (Strongly oppose)</td>
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My advice to local officials
How does this fit with your long-term plan?

• If goal is for substantial residential development or growth of tourism, wind may not be right

• If goal is to sustain agriculture, wind can fit
The ideal zoning ordinance?

Support/oppose additional turbines in township, by zoning setback distance

<table>
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<tr>
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<th>Unzoned township</th>
<th>1.5x height</th>
<th>1,000'/1,320'</th>
<th>1,320'</th>
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The importance of process

Support/oppose additional turbines in township, by agree/disagree opportunity to provide input

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<tr>
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<td>58</td>
<td>17</td>
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“I had ample opportunity to provide input during the wind project planning stage.”
My advice to wind developers
The importance of transparency

Support/oppose additional turbines in township, by agree/disagree wind developer acted transparently

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<td>11</td>
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<td>72</td>
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“The wind project developer acted openly and transparently throughout the planning process.”
Be ready to answer questions

- About who benefits/amount of tax revenue
- About decommissioning
- On where the power goes
- On the impact of the windfarm on their electric bill
- On the extent of government subsidies
The CLOSUP Wind Project

Sarah Mills, Research Fellow
Phone: (734) 615-5315
Email: sbmills@umich.edu
Web: www.closup.umich.edu/wind