

**Original Questions:**

1. Are the generators/windmills manufactured/built in the USA? In Michigan? What power company is involved? How much are they paying, and how much is government funded? **Needs further clarification, but see response below.**
2. If wind power projects locate in Benzie and Manistee Counties, will that increase the chance that wind related manufacturing operations will locate there too? Does the city of Manistee have manufacturing, workforce and infrastructure capacity to support new wind-related industries? Do wind manufacturing facilities tend to locate near wind power projects? **Beyond scope of project; see responses below to question N4.**
3. Can a community/township develop a renewable energy program that only allows Michigan made products or county-made products? **See response below.**
4. What economic benefits have been recognized by communities who have participated in wind energy projects? **See response below.**
5. What analysis has been done on the economic impact on the township and county, overall? Other than the landowners who will get a payment for the use of their land, what other economic benefits will be gained for the township? I understand these payments mean a lot to these people. **See response to question N4.**
6. If the turbines are built, how will it affect future growth in the county? Let's say for example, landholder A puts up turbines on his property and then his neighbor B wishes to sell his property for residential development. But B has lots of property that cannot be built because it is within the setback of turbines on property A. Has anyone looked at the potential conflicts that might arise in these situations and also how this might affect the growth patterns in the county? **Needs more clarification.**
7. Would it be prudent for the township to look into the future as to how they see their community with or without wind turbines and project? How each would further or limit the growth or vision of the community? If it is determined that grid-scale wind turbine development inhibits the future of the community, can they exclude them or confine them to a small area? **See response below.**
8. At the end of this discussion, what will our bottom line be? I have seen editorials written by the owner of Crystal Mountain Resort in which he says he knows the situation isn't perfect, but we need to get started and "do something" anyway, a sort of plunge in because it's better than being beholden to oil attitude. The second school of thought I have seen takes a more cautious approach, which is that even if alternative energy is out there, it should fit the needs of the community at its most local level, and if it doesn't we should have the courage to pass for now. **WHAT DOES THE COUNTY WANT AS ITS BOTTOM LINE APPROACH? Beyond scope of this project.**
9. Data to show the impacts on tourism and economic development. **See response below.**
10. If a wind developer is stating that it is going to create so many dollars and so many local jobs for the community, can we make it mandatory? **See response below.**
11. What have been the job and tax revenue losses in Benzie and Manistee Counties over the last 3 – 5 years? How many construction jobs, full-time operations jobs, and indirect service jobs could be gained by Benzie and Manistee counties if the proposed 200 MW Gail Windpower Project and other future wind project developments locate in the counties? What potential tax revenue could be gained if the proposed 200 MW Gail Windpower Project and other future wind project developments locate in the counties? **Project specific.**
12. Re: Cost-Benefit Analysis of Industrial Scale Wind Energy – Where is the hard data and evidence of viability, actual performance rather than “capacity”? What is the cost and CO2 emission of the entire process including mining of all materials involved, manufacturing of all components of a large wind industry facility, including turbines, concrete bases, access roads, transmission lines, transportation, installation, environmental impact on natural rural areas, and actual performance balanced against all. What is the impact on land, wildlife and citizens? How much CO2 emission is actually being offset? How “green” is industrial wind energy? Does it really cut coal use by any significant amount? If it comes down to a very small contribution, is it really justifiable to pursue this scale of industrialization

of rural areas and otherwise natural environments, or to place the burden of this industrialization on small rural communities? At what cost – in both tangible and intangible ways? [See response below.](#)

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### **Questions and Responses:**

*These questions may have been recategorized and reorganized. Some may have been sent to another “theme” area (this will have been explained in red under the “Original Questions” section). In other cases two or more questions will be answered with one response.*

- N1. Are the generators/windmills manufactured/built in the USA? In Michigan? What power company is involved? How much are they paying, and how much is government funded?**

**Response:** This question needs further clarification. Michigan does have some utility-scale wind turbine manufacturers, and several others exist in the United States. For example, Northern Power Systems builds direct drive wind turbines in its Saginaw facility. Other companies, like Three M Tool & Machine Inc. in Oakland County, produce gearbox housings. The decision about where to buy parts is up to the developer. Government incentives, including federal stimulus grants and loans, have helped kick start some of these industries in Michigan. To view a list of wind turbine manufacturers in Michigan, visit <http://energy.sourceguides.com/businesses/byGeo/US/byS/MI/byP/wRP/byB/mfg/mfg.shtml>.

The US International Trade Commission’s 2009 report titled “Wind Turbines: Industry and Trade Summary” stated that US domestic production capacity increased due to the growth of the U.S. wind energy market from 2003 to 2008. Five companies (Acciona, Clipper, CTC/DeWind, Gamesa, and GE) currently manufacture nacelles in the United States (the nacelle houses the generator and gearbox). Six more companies were planning to open nacelle plants in 2009 or 2010. There are at least 10 blade and 15 tower manufacturers with plants open or planned. This report is accessible at <http://www.usitc.gov/publications/332/ITS-2.pdf>

- N3. Can a community/township develop a renewable energy program that only allows Michigan made products or county-made products?**

**Response:** The township could not likely adopt a policy that everyone in the community could only use renewable energy resources made locally or in Michigan. The federal Constitution has been interpreted to prohibit state and local governments from adopting laws that discriminate against interstate commerce unless the discrimination is justified by a valid reason, other than economic protectionism, that cannot be achieved in a less restrictive way. That is to say, a state or local government cannot adopt a rule that people can only purchase goods made in Michigan just because it wants to promote business in Michigan over business in another state. There would have to be a strong reason other than promoting local business for limiting the purchase of renewable energy products to Michigan or local sources.

However, the township might be able to adopt a policy that the township government itself would use locally- or Michigan-made renewable energy resources where possible. When the township is acting as a market participant, as opposed to when it is exercising its regulatory powers, it may choose to favor certain sellers or buyers over others, just as any other private party could choose to do.

Under either scenario, the township would also have to be aware that local preferences for purchasing goods can run afoul of international trade agreements the United States has made with other countries. There are also constitutional limitations on the extent to which a local government can favor hiring local residents over residents of other states.

Also see the response to N1 for information on wind turbine manufacturers in Michigan.

- N4. What economic benefits have been recognized by communities who have participated in wind energy projects?**

**Response:** It is important to note that economic impacts can vary tremendously across projects, and depend on the contracts negotiated among township officials, developers and community members. Economic

benefits will also vary based on the size of the project, the region in which it is built, and the types of policies in place regarding wind energy generation in the area. A general list of benefits is described in Illinois State University's Center for Renewable Energy report on "Wind Energy Development in Illinois," online at <http://renewableenergy.illinoisstate.edu/wind/publications/2011%20FINAL%20Economic%20Impact%20Report.pdf>. For instance, wind energy projects can create a need for skilled labor and create some job opportunities (both temporary and permanent), provide steady income to leasing landowners, increase tax revenues for local governments, benefit school districts, and provide upgrade and improvements to road conditions.

Likewise, a report on Vermont's wind energy provides an in-depth analysis of many similar economic benefits that wind energy has provided to the state: see, "The Economic Benefits of Windfarm Development in Vermont," accessible at [http://www.vermont.org/article/windfarm\\_benefits.pdf](http://www.vermont.org/article/windfarm_benefits.pdf). In addition, the Department of Energy's National Renewable Energy Lab has published a report that assesses the economic benefit of wind energy development to various communities around the United States: "Analysis: Economic Impacts of Wind Applications in Rural Communities". This full report can be found online at [http://www.windpoweringamerica.gov/pdfs/wpa/econ\\_dev\\_casestudies\\_overview.pdf](http://www.windpoweringamerica.gov/pdfs/wpa/econ_dev_casestudies_overview.pdf).

- N7. Would it be prudent for the township to look into the future as to how they see their community with or without wind turbines and project? How each would further or limit the growth or vision of the community? If it is determined that grid-scale wind turbine development inhibits the future of the community, can they exclude them or confine them to a small area?

**Response:** See response to question DD5 about restricting the density of development. Townships usually do go through visioning processes to create a master plan for economic development and landscape protection. This will incentivize or restrict aspects of wind development based on the desires of the community. This decision will ultimately be up to the members of the community and local officials.

Arcadia and Bear Lake Townships in Manistee County and Blaine and Gilmore Townships in Benzie County have agreed to partner in developing a collaborative master plan and implementation strategy. When completed, it will provide a master plan to serve the needs of each township but also identify opportunities for collaboration which may encompass service sharing and joint efforts involving economic development, tourism, recreation, agriculture, agribusiness and others. The project will begin in January 2012 and be completed during the first quarter of 2013, assuming full funding is secured by the Alliance for Economic Success, the organization coordinating the project.

- N9. Data to show the impacts on tourism and economic development.

**Response:** For information on the effects of tourism, see section J.

The National Renewable Energy Lab's 2005 document, "Analysis: Economic Impacts of Wind Applications in Rural Communities," provides further information about the economic impact of wind farm development on communities across the United States. It is accessible at [http://www.windpoweringamerica.gov/pdfs/wpa/econ\\_dev\\_casestudies\\_overview.pdf](http://www.windpoweringamerica.gov/pdfs/wpa/econ_dev_casestudies_overview.pdf)

There is also an economic model, the Jobs and Economic Development Impacts (JEDI) model, that allows users to estimate economic development impacts from wind power generation projects. Model users can enter as much project-specific data as possible, including information about construction materials and labor costs, annual operating and maintenance costs (personnel, materials, and services) and land lease and financing parameters. This model can be found at [http://www.nrel.gov/analysis/jedi/about\\_jedi\\_wind.html](http://www.nrel.gov/analysis/jedi/about_jedi_wind.html).

N10. If a wind developer is stating that it is going to create so many dollars and so many local jobs for the community, can we make it mandatory?

**Response:** Contractual agreements are created on a per-project basis, providing different economic conditions for different wind developments. In addition, many agreements about compensation are determined by the performance of the project, which cannot be guaranteed as it is greatly influenced by meteorological conditions, maintenance costs and the prevailing price of energy.

N12. Re: Cost-Benefit Analysis of Industrial Scale Wind Energy – Where is the hard data and evidence of viability, actual performance rather than “capacity”? What is the cost and CO2 emission of the entire process including mining of all materials involved, manufacturing of all components of a large wind industry facility, including turbines, concrete bases, access roads, transmission lines, transportation, installation, environmental impact on natural rural areas, and actual performance balanced against all. What is the impact on land, wildlife and citizens? How much CO2 emission is actually being offset? How “green” is industrial wind energy? Does it really cut coal use by any significant amount? If it comes down to a very small contribution, is it really justifiable to pursue this scale of industrialization of rural areas and otherwise natural environments, or to place the burden of this industrialization on small rural communities? At what cost – in both tangible and intangible ways?

**Response:** This question relates to many of the thematic areas being addressed in this report. Refer to L1 and EE24 for more information on this topic. The Carnegie Mellon Electricity Industry Center’s lifecycle analysis of coal, natural gas, oil, nuclear, hydro, biomass, wind, and solar is available at [https://wpweb2.tepper.cmu.edu/ceic/pdfs/CEIC\\_03\\_05.pdf](https://wpweb2.tepper.cmu.edu/ceic/pdfs/CEIC_03_05.pdf).