

Bibliography for NEWEEP Webinar: Impact of Wind Power Projects on Residential Property Values

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Journal Articles

Peer Reviewed

Sources appearing in the peer-reviewed section are identified as such by (a) cross referencing them with the publications they appear in to identify them as academic peer-reviewed, or (b) because specific verification that the source publication uses a process of rigorous academic peer-review has been submitted to NEWEEP staff. If we cannot verify that a publication meets the academic peer-reviewed standard, we have placed the article from that publication in the "Unknown Review Process" category.

- **Bond, S. (2008) Attitudes Towards the Development of Wind Farms in Australia. Journal of Environmental Health Australia. 8(3): 19-32.**
This paper outlines the results of research carried out in Western Australia in 2008 to investigate the attitudes of residents towards the development of a wind farm. The results indicate that the majority of the respondents think of a wind farm in positive terms. The proximity to the wind farm is an important aspect that could determine attitudes with many respondents reporting that they would not want to live “near” a wind farm, usually stated as between 1-5km. Over a third (38%) of the respondents would pay 1-9% less for their property due to the presence of a wind farm nearby.
- **Sims, S. and Dent, P. (2007) Property Stigma: Wind Farms Are Just The Latest Fashion. Journal of Property Investment & Finance. 25(6): 626-651.**
This study focused on residential property surrounding two wind farms in Cornwall. Transaction data for 1,052 house sales completed between 2000 and 2004 were obtained and analyzed using regression modeling and comparative sales analysis. A second study undertook an analysis of the planning objections to wind farms in this location. The analysis of transaction data found some correlation between distance from a wind farm, and value. However, the data were insufficiently detailed to draw any sound conclusions. The analysis of planning objections revealed that 95 percent of objections came from people living outside Cornwall. Whilst the methodology is sound, the available data were limited to house type and selling price, and therefore not sufficiently detailed to highlight any small changes in value.
- **Sims, S., Dent, P. and Oskrochi, G. R. (2008) Modeling the Impact of Wind Farms on House Prices in the UK. International Journal of Strategic Property Management. 12(4): 251-269.**
This paper presents an analysis of 201 sales transactions from houses situated within half a mile of a 16 turbine wind farm in Cornwall, UK. Whilst no causal link was established between the presence of the wind farm and house price, there was some evidence to suggest that both noise and flicker from the turbine blades could blight certain property and that the view of countryside enjoyed by the occupier had some value which may be affected by a wind farm.

Reports

- **Goldman, J. C. (2006) A Study in the Impact of Windmills on Property Values in Tucker County, West Virginia for the Proposed Beech Ridge Energy, L.L.C. project in Greenbrier County, West Virginia. Goldman Associates Inc. Prepared for Spilman Thomas & Battle, P.L.L.C., Charleston, WV. April, 2006. 51pages. West Virginia Case No. 05-1590-E-CS.**
Goldman Associates Inc. investigated the effects on property values around the existing Mountaineer wind project in nearby Tucker County, WV. They conducted unstructured “front porch” interviews with 21 homeowners and unstructured phone interviews with 17 local real estate experts (e.g., realtors, appraisers) asking “Do you think the windmills have impacted property values” and did they have any comments about the facility. Two of the homeowners offered negative comments, six were indifferent and eight offered positive comments about the facility, yet none thought that property values were affected in any way. Similarly, none of the real estate experts believed property values were affected by the presence of the facility.
- **Grover, D. S. (2002) Economic Impacts of Wind Power in Kittitas County, WA. ECONorthwest. Prepared for Phoenix Economic Development Group, Ellensburg, WA. November, 2002. 18 pages.**
This analysis involved the survey of 13 tax assessors from counties in which a total of 22 wind facilities were located. Each facility had more than 30 turbines and was erected after 1992. Of the 13 counties, six had homes that were believed to have views of the wind facilities. The assessors from those counties reported that the turbines have not altered the value of those properties.
- **Haughton, J., Giuffre, D., Barrett, J. and Tuerck, D. G. (2004) An Economic Analysis of a Wind Farm in Nantucket Sound. Beacon Hill Institute at Suffolk University, Boston, MA. May, 2004. 83 pages.**
As part of an economic analysis of the proposed offshore wind facility in Nantucket Sound, the authors conduct a survey of 546 individuals made up of real estate agents (n=45) and Cape Cod residents (n=501), finding there is an adverse expectation about the proposed facility on property values from both residents (21%) and realtors (49%), with the majority of realtors believing effects will be pronounced for waterfront homes. Conversely, 79% of the homeowners and 42% of the realtors believe the facility will either have no effect or a positive effect on values. Of those expecting adverse effects, homeowners believe that decreases (on average) for all homes will be 4.0% while decreases for waterfront properties will be roughly 11%. Realtors expect losses to total 4.6% on average for all homes, with the majority of respondents believing homes on the ocean to be more strongly affected.
- **Hoen, B. et al., 2009. The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis, Berkeley, CA: Ernest Orlando Lawrence Berkeley National Laboratory.**[\[4\]](#) **Abstract:** With wind energy expanding rapidly in the U.S. and abroad, and with an increasing number of communities considering wind power development nearby, there is an urgent need to empirically investigate common community concerns about wind project development. The concern that property values will be adversely affected by wind energy facilities is commonly put forth by stakeholders. Although this concern is not

unreasonable, given property value impacts that have been found near high voltage transmission lines and other electric generation facilities, the impacts of wind energy facilities on residential property values had not previously been investigated thoroughly. The present research collected data on almost 7,500 sales of singlefamily homes situated within 10 miles of 24 existing wind facilities in nine different U.S. states. The conclusions of the study are drawn from eight different hedonic pricing models, as well as both repeat sales and sales volume models. The various analyses are strongly consistent in that none of the models uncovers conclusive evidence of the existence of any widespread property value impacts that might be present in communities surrounding wind energy facilities. Specifically, neither the view of the wind facilities nor the distance of the home to those facilities is found to have any consistent, measurable, and statistically significant effect on home sales prices. Although the analysis cannot dismiss the possibility that individual homes or small numbers of homes have been or could be negatively impacted, it finds that if these impacts do exist, they are either too small and/or too infrequent to result in any widespread, statistically observable impact.

- **Khatri, M. (2004) RICS Wind Farm Research: Impact of Wind Farms on the Value of Residential Property and Agricultural Land. Prepared for Royal Institute of Chartered Surveyors, London, UK. November 3, 2004. 11 pages.**

Khatri mailed 1,942 surveys to licensed surveyors in Great Britain (U.K.); 405 voluntarily responded, and roughly 80 were surveyors who had experience with residential transactions near windfarms. The report finds that 60% of the sample suggested that wind farms decrease the value of residential properties where the development is within view. 67% of the sample indicated that the negative impact on property prices starts when a planning application to erect a wind farm is made. The main factors cited for the negative impact on property values are: 1) visual impact of wind farm after completion, 2) fear of blight, and 3) the proximity of a property to a wind farm. The respondents believe once a wind farm is completed, the negative impact on property values continues but becomes less severe after two years or so after completion. A significant minority of surveyors with experience of residential sales affected by wind farm developments (40%) indicated that there is no negative price impact. Only 28% suggested wind farm development negatively influences the value of agricultural land, while 63% suggested there is no impact at all (either positive or negative). The remaining 9% suggest a positive impact. The survey suggests that wind farms do not impact on residential property values in a uniform way. The circumstances of each development can be different.

- **Kielisch, K. (2009) Wind Turbine Impact Study: Dodge and Fond Du Lac Counties, WI. Appraisal Group One. Prepared for Calumet County Citizens for Responsible Energy (CCCCE), Calumet County, WI. September 9, 2009. 73 pages.**

Kielisch conducted two separate analysis to investigate the property value impacts, a survey of realtors, and sales study of residential land. In the survey he asks realtors from counties that have existing wind facilities what they predict impact to be on nearby residential properties (both improved - with a home - and unimproved - land only) ranging from 500 feet to 1/4 mile from the nearest turbines. A large majority believed properties would be impacted, and of those, effects were predicted to range from -24% (improved lot 1/2 mile from turbine) to -43% (unimproved lot 500 feet from turbine). The sales analysis investigated residential unimproved

lots that had sold near the existing wind facilities, and compared them to parcels further away finding large differences of between -19% and -40% in the price per acre paid. Other potentially confounding differences between the properties such as whether the parcel was served by municipal water or had views of the nearby lake, were not accounted for.

- **Poletti, P. (2007) A Real Estate Study of the Proposed White Oak Wind Energy Center, Mclean & Woodford Counties, Illinois. Polleti and Associates. Prepared for Invenergy Wind LLC, Chicago, IL. January, 2007. 63 pages.**
Poletti investigated 256 sales that occurred near wind facilities in Wisconsin (Kewaunee County) and Illinois (Lee and McLean County). He divided the sales into their respective counties and further into four sub-groups: small residential tracts without homes (<5 acres), residential tracts without homes (>5 and <20 acres), large tracts without homes (>20 acres) and tracts with single family residences. From each sub-group he separated sales that occurred near the turbines from those further away and then tested if their prices per acre (for unimproved parcels) or per square foot (for improved parcels) differed significantly. He was unable to find statistical evidence that parcels near the facilities were impacted.
- **Sterzinger, G. et. al. (2003) The Effect of Wind Development on Local Property Values, Renewable Energy Policy Project Analytical Report, Washington, D.C. May 2003. 81 pages**
- **Township Of Lincoln Board of Supervisors (2000) The Final Report of The Township of Lincoln Wind Turbine Moratorium Study Committee, Lincoln, Wisconsin. Township of Lincoln Wind Turbine Moratorium Study Committee, Lincoln, Wisconsin. February, 2000. 177 Pages. Abstract:** This report includes numerous suggested changes to the existing conditional use permitting permits and permitting process, the Town's zoning ordinance regarding wind turbines, and options to pursue for future permitting of commercial or utility-sized wind turbines. The report also makes recommendations for permitting home-sized and farm-sized wind generators. Also included in the report are most of the important documents that the Wind Turbine Moratorium Study Committee considered during its two year study.

Conference Papers

- **Gardner, D. (2009) Impact of Wind Turbines on Market Value of Texas Rural Land, Gardner Appraisal Group Inc., Prepared for the South Texas Plains Agriculture Wind & Wildlife Conference. American Wind Power Center & Museum, Lubbock, Texas, February 13, 2009. 45 pages.**

Other

- **Hoen, B. (2006) Impacts of Windfarm Visibility on Property Values in Madison County, New York. Thesis Prepared for Masters Degree in Environmental Policy. Bard College, Annandale-On-Hudson, NY. April, 2006. 73 pages.**

This report analyzes 280 arms-length single-family residential sales using a hedonic regression model. The sales took place from 1996 to 2005 and are within 5 miles of a 20 turbines - 30 megawatt (MW) windfarm in Madison County, New York. All homes in the sample are visited to ascertain the actual level of turbine visibility. The analysis finds an absence of measurable effects of windfarm visibility on property transaction values. This result holds even when concentrating on homes within a mile of the facility and those that sold immediately following the announcement and construction of the windfarm in 2001.