

Wind Farms & Rural Property Values

Gary K. DeClark, MAI, CRE, FRICS, R/W-AC



Valbridge
PROPERTY ADVISORS

Objective:

Present concepts and consider potential impact of wind turbines on rural land values

- ◆ Define market value and the conditions implicit in determining sales price
- ◆ Consider buyer preferences in relation to market value
- ◆ Describe the characteristics that impact rural land prices
- ◆ Introduce current sales trends of rural land in Illinois and Region 4, which includes McLean County
- ◆ Consider the impact of wind turbines on rural land values

Objective (cont'd.)

- ◆ Consider opponents view of wind turbines as a “stigma”
- ◆ Provide an analysis of recent sales history for McLean County and determine if existing wind turbines have impacted property values
- ◆ Conclusion

What is Market Value?

Market value is defined as:

“The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus.”

Market Value Conditions

Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. buyer and seller are typically motivated;
2. both parties are well informed or well advised, and each acting in what he or she considers his or her own best interest;
3. a reasonable time is allowed for exposure in the open market;
4. payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
5. the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions³ granted by anyone associated with the sale.

Market Value & Home Buyer Preferences

- ◆ A home can be thought of as a bundle of characteristics (e.g., number of square feet, number of bathrooms, number of fireplaces, and amount of acreage).
- ◆ When a price is agreed upon between a buyer and seller there is an implicit understanding that those characteristics have value.

There are a myriad of home buyer preferences

- ◆ Lot size or location
- ◆ # of square feet of living area
- ◆ # of bathrooms or fireplaces
- ◆ The presence of air conditioning
- ◆ Neighborhood characteristics (e.g. school district)
- ◆ Surrounding environmental conditions (proximity to an amenity or “disamenity”)
- ◆ View
- ◆ The list goes on and is may vary widely by individual buyer, property type or geographic location.

Buyer Preferences vs. Market Value

- ◆ Buyer preferences, although considered implicit in the negotiated sale price, can be entirely or partly subjective.
- ◆ Appraisers analyze sale data based on the typical buyer's preferences by property type or market area, for instance.
- ◆ As appraisers, we attempt to correlate the data to determine which characteristics are most important to the market participants.

What Drives Market Value for Rural Landowners?



According to the the most recent *FarmJournal* Publication released in December 2017, farmland values are currently affected by the following key factors.

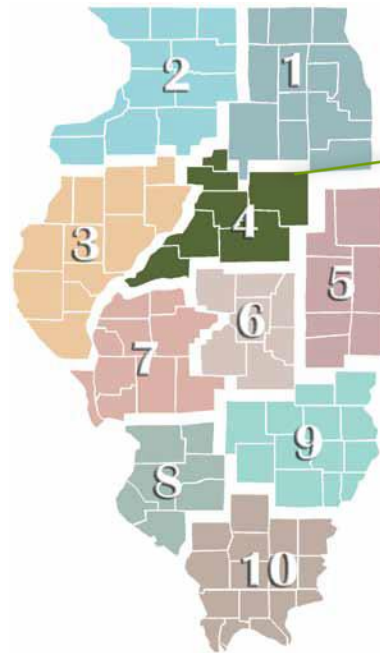
- ◆ Available cash by farmers
- ◆ The supply of land on the market
- ◆ Commodity prices
- ◆ Global and U.S. policy changes (centered around trade, ethanol and taxes)

Farm Land Value Drivers cont'd

- ◆ Interest rates
- ◆ Global demand for food
- ◆ Optimism in rural America
- ◆ The number of interested land buyers

Current Illinois Farmland Values and Lease Trends

- ◆ McLean County is situated in Region 4 or the North Central Region as defined by the *Illinois Society of Professional Farm Managers and Rural Appraisers*.



**Includes
McLean
County**

Current Region 4 Land Value and Cash Rent Trends

Farm Classification	Total Value Per Acre (Typical)	% Change in \$/Acre from prior year	Change in rate of land turnover	% Change from prior year
Excellent Productivity	\$10,000-\$11,500	Down 5%	Steady	Down 3%-5%
Good Productivity	\$8,000-\$9,500	Down 8%	Steady	Down 3%-5%
Average Productivity	\$5,500-\$8,500	Similar	Steady	Down 3%-5%
Fair Productivity	\$5,000-\$7,000			
Recreational Land	\$3,500-\$5,500	Similar	Down 20%	
Other Sales (describe)	\$8,500-\$13,500	Similar	Down 10%	

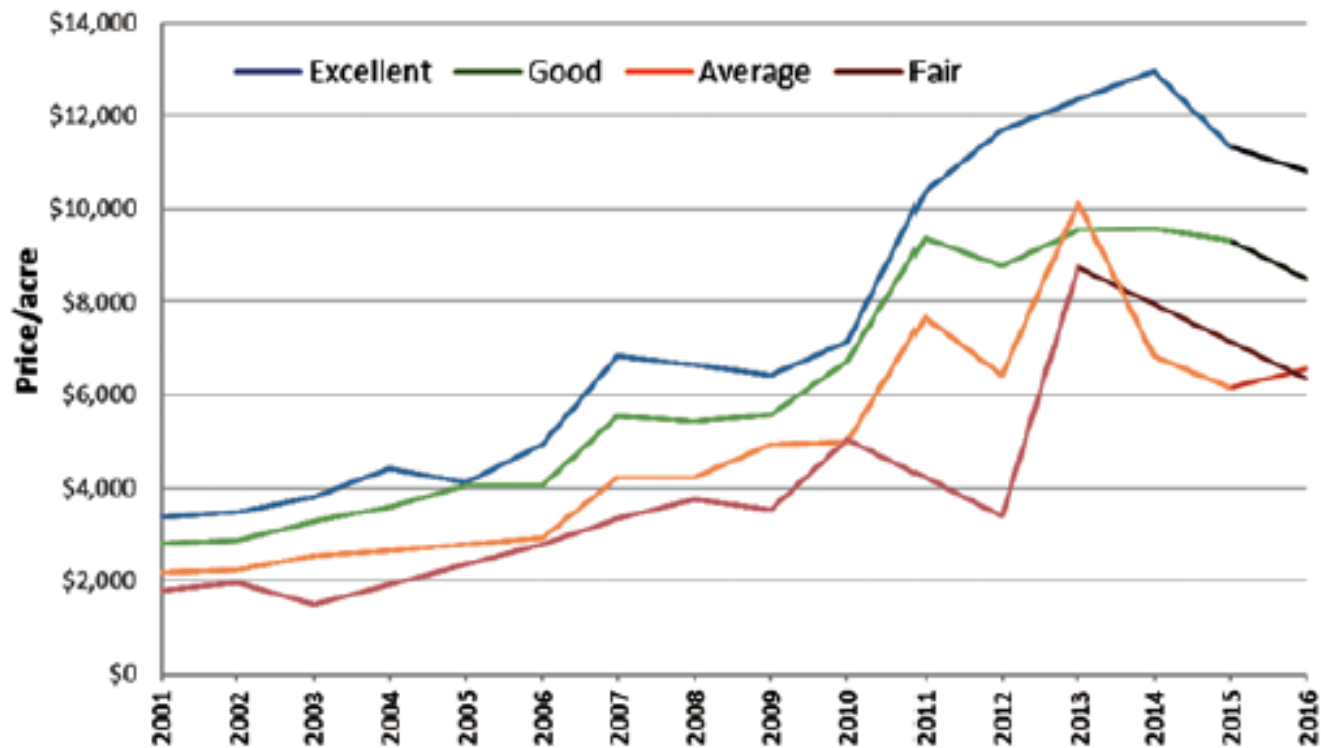
- ◆ For a large percentage of the territory, land values dipped throughout the beginning of 2016, but seemed to level off thereafter.
- ◆ Though the number of 1031 tax-deferred exchange buyers continues to be low, when a buyer has 1031 funds that need to be re-invested, these sales can see higher values.

Current Region 4 Sales Trends

- ◆ Recent sales activity varied by county in Region 4.
- ◆ Marshall, Putnam, Tazewell and Mason counties all saw steady to slightly lower levels of land offered for sale.
- ◆ McLean, Livingston and Woodford counties all continued to have a steady number of sales when compared to the prior year.
- ◆ Region 4 is described as having adequate demand to meet most of the supply, but some listed farms sat on the market for extended periods of time.

Current Region 4 Sales Trends by Productivity Tract

Region 4: Land Values Summary by Class



Productivity Tracts Defined

- ◆ Soil productivity indexes (PI) are determined locally by the **University of Illinois Bulletin 811**.
- ◆ There are over 800 soils in IL beginning with 47 with the highest rating being 147.
- ◆ Tracts in desirable communities, good transportation and market access score highest.
- ◆ Soil topography, erosion, fertility loss, improper drainage or noxious weed infestations contribute to tracts having lower index ratings.

Overall Region 4 Farmland Value Trends

- ◆ Supply of farmland in the region has been relatively “tight”, indicating neither an over-abundance nor lack of supply of available tracts of land.
- ◆ Land values have continued to soften due to:
 - ◆ Federal Reserve opting to increase interest rates
 - ◆ Consistently lower commodity prices
 - ◆ Tightening farmer cash flows

Wind Power Industry Impact on Land Values in Region 4

According to the **2017 Illinois Land Values and Lease Trends Report**, the wind power industry has had a positive impact on land values.

- ◆ “It is said that some of the “best wind” at 50-80 meters high exist in this region of the state”.
- ◆ Wind turbines provide areas of Livingston, McLean, Tazewell and Woodford counties with income diversification, beyond agriculture, which makes these tracts more attractive to an investor.

Wind Turbines as a Detrimental Condition?

Some opponents of wind farms have argued that wind turbines are a detriment to rural property values based on the perception that they create stigmas, in particular:

- 🔹 Area Stigma
- 🔹 Scenic Vista Stigma
- 🔹 Nuisance Stigma

Wind Turbines as a Detrimental Condition?

- ◆ Several studies over the past few decades have not been able to correlate any detriments to wind turbines on rural property values.
- ◆ We will consider the actual recent sales data provided by the McLean County Assessor's records to determine whether the area has been affected.

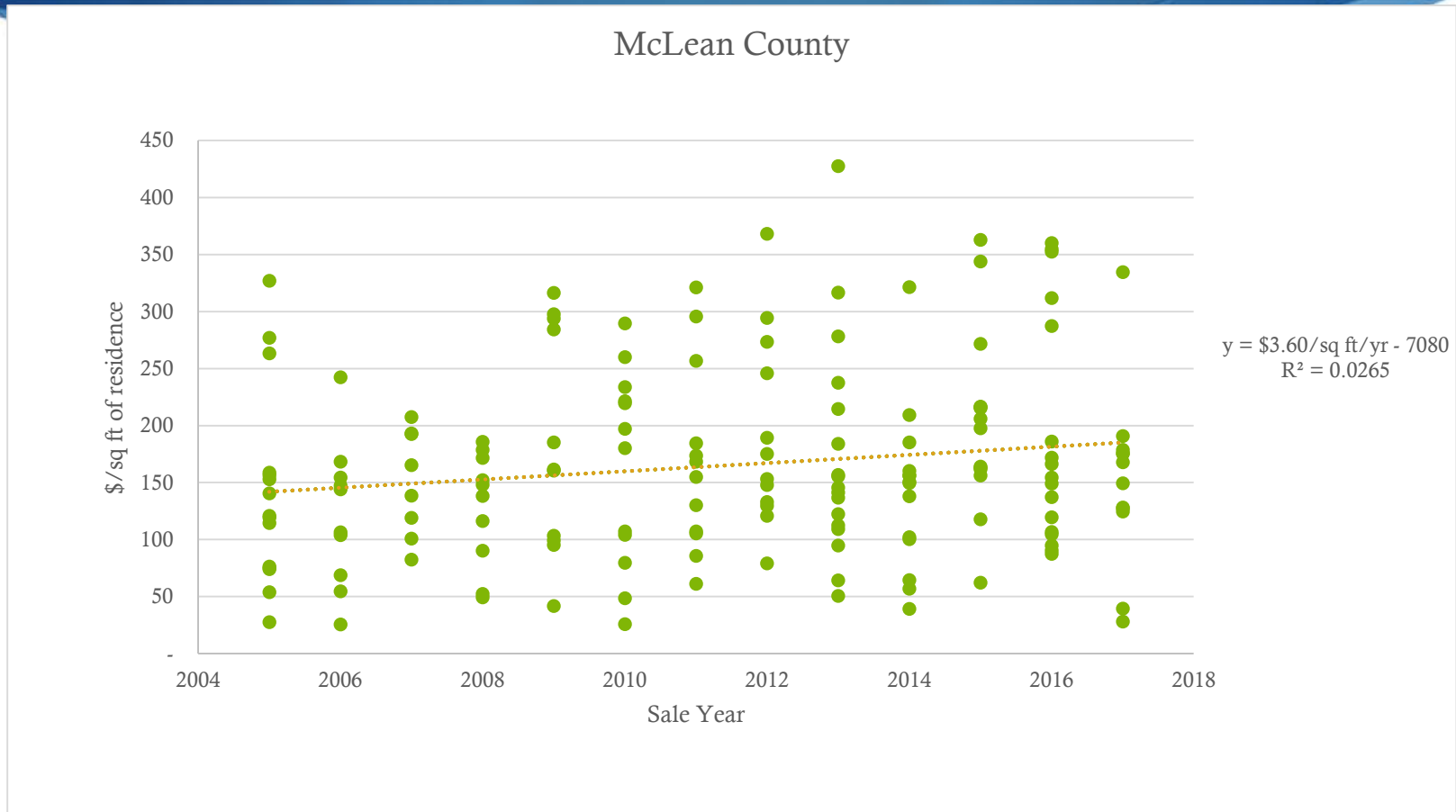
A Micro-level Analysis of Recent McLean County Sales Data

- ◆ Although literature mentioned previously indicates that there is unlikely to be a statistically measurable change in sales prices due to proximity to wind turbines, we attempted to find such a trend using the best publically available data.
- ◆ We used McLean County Assessor's data from August 2017. We attempted to normalize sales for larger and smaller houses by dividing the property sales price by the area of the house to get a \$/square foot.
- ◆ We eliminated properties with no sale price data. We eliminated properties with a sales price of less than <\$5,000 (to eliminate token sales amounts \$1, \$100 sales). Inclusion of properties with sales prices of <\$5,000 did not significantly change our results.

A Micro-level Analysis of Recent McLean County Sales Data

- ◆ We also eliminated properties with sales prices of over \$1,000,000 and with more than 25 acres in an attempt to focus on more typical house sales for the area.
- ◆ Sales prior to 2004 were eliminated to focus on recent trends. Inclusion of all county data back to the earliest sales records reinforces that property values near turbines has increased over time.

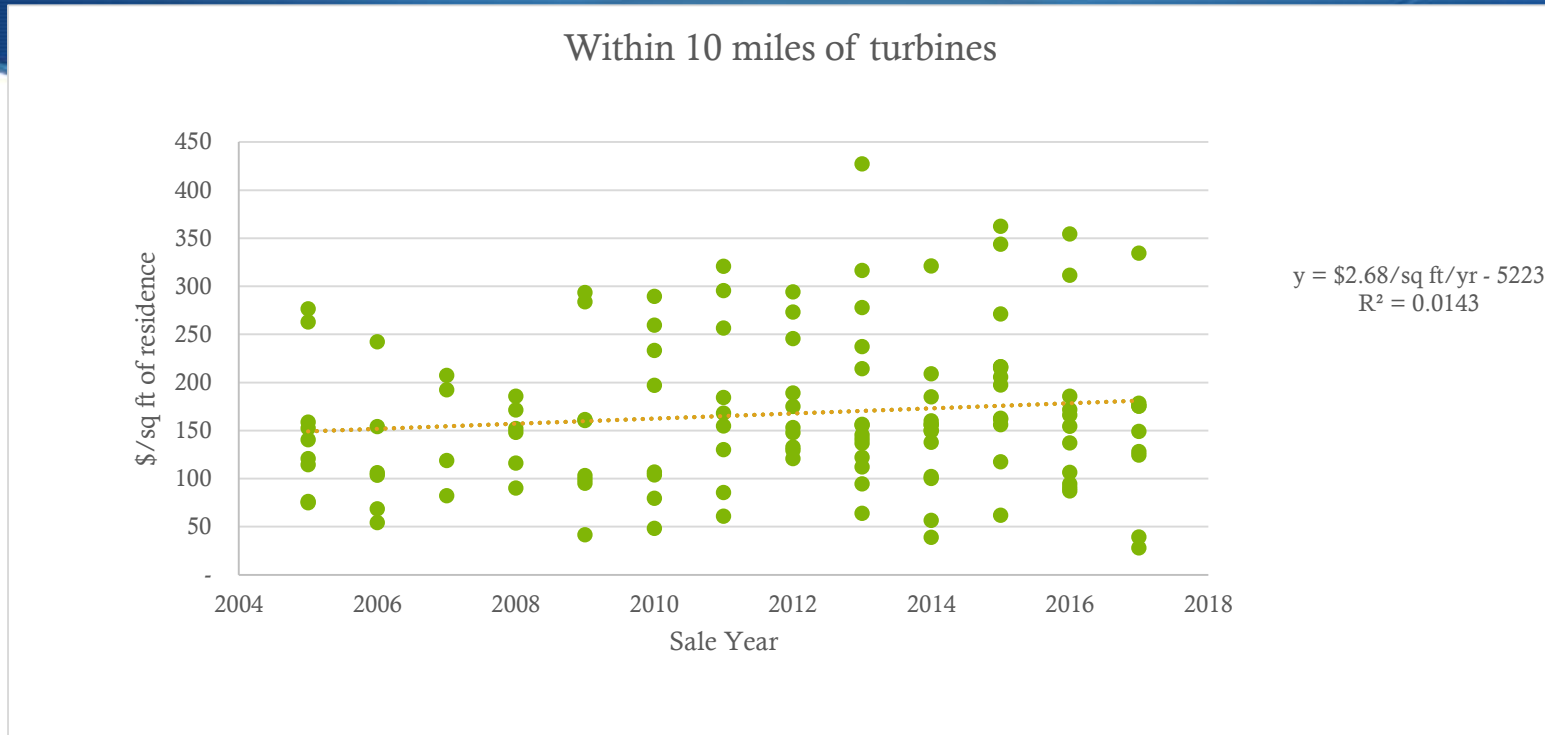
A Look at the McLean County Data (cont'd.)



A Look at the McLean County Data (cont'd.)

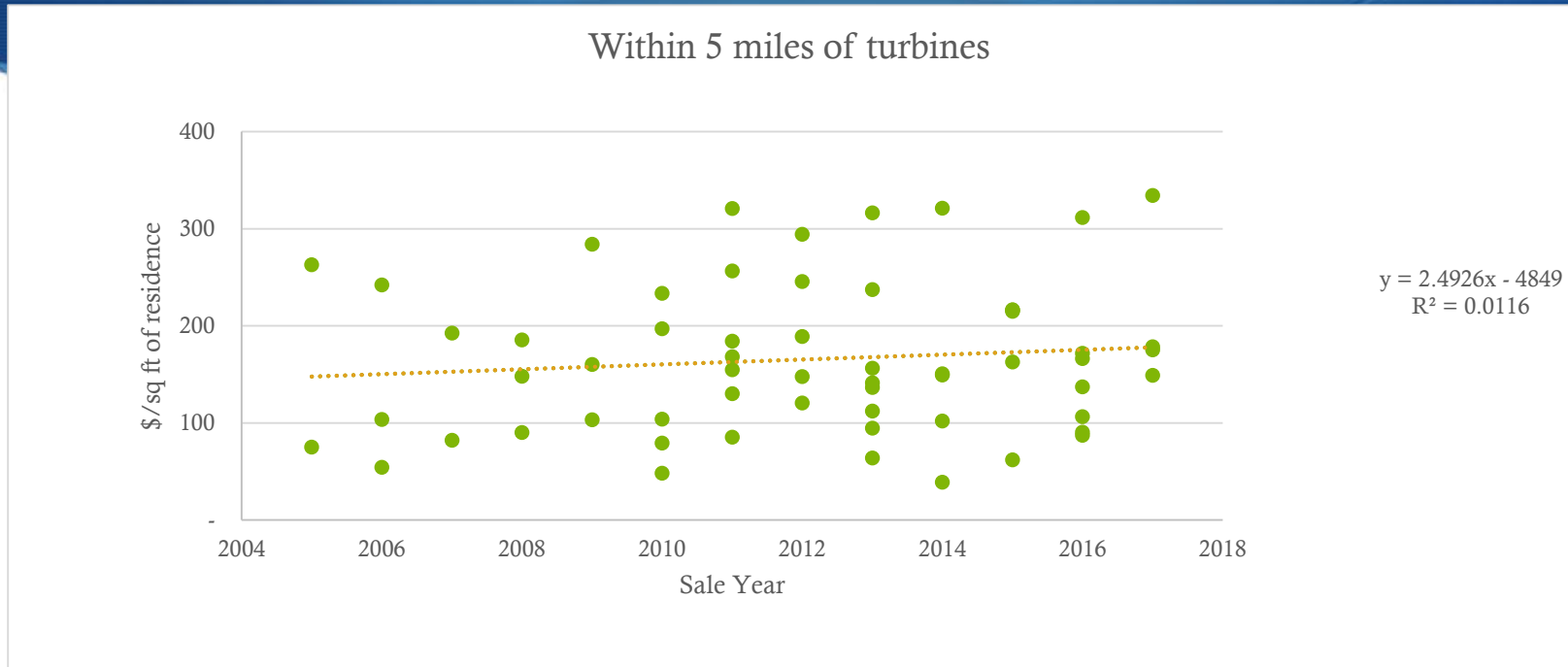
- ◆ If turbines have an impact on property values, we would expect to see a downward trend once Twin Groves I and II and the White Oak projects are built (in 2007, 2008, and 2011, respectively).
- ◆ The R^2 value indicates that there is no statistically significant trend and 99.8% of the data variation is not explained by the trendline. If we were to assume that the trendline were significant, then countywide homes have increased at an average of \$3.6/sq ft/yr.

A Look at the McLean County Data (cont'd.)



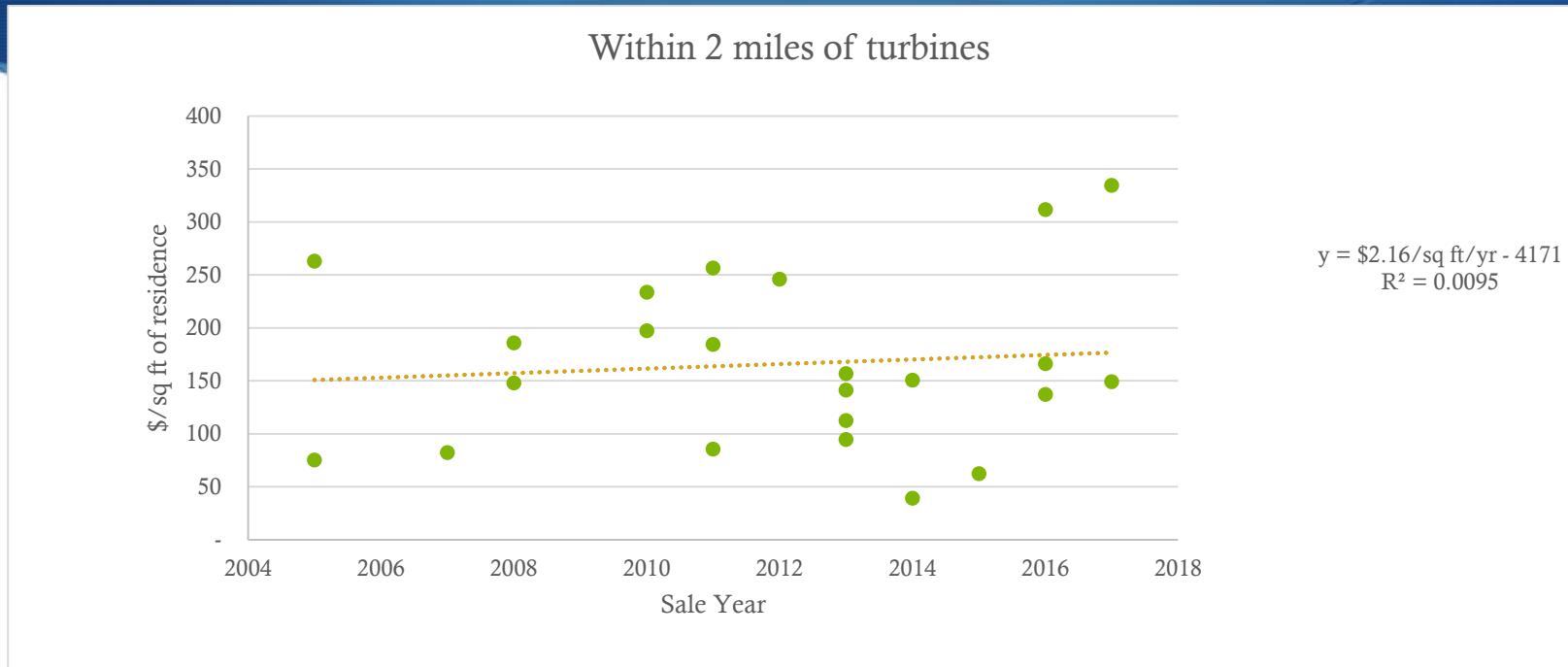
For properties within 10 miles of turbines, the R2 value indicates that there is no statistically significant trend and 98.6% of the data is not explained by this trendline. If we were to assume that the trendline is significant, then homes within 10 miles of turbines have increased in value at an average of \$2.68/sq ft/year.

A Look at the McLean County Data (cont'd.)



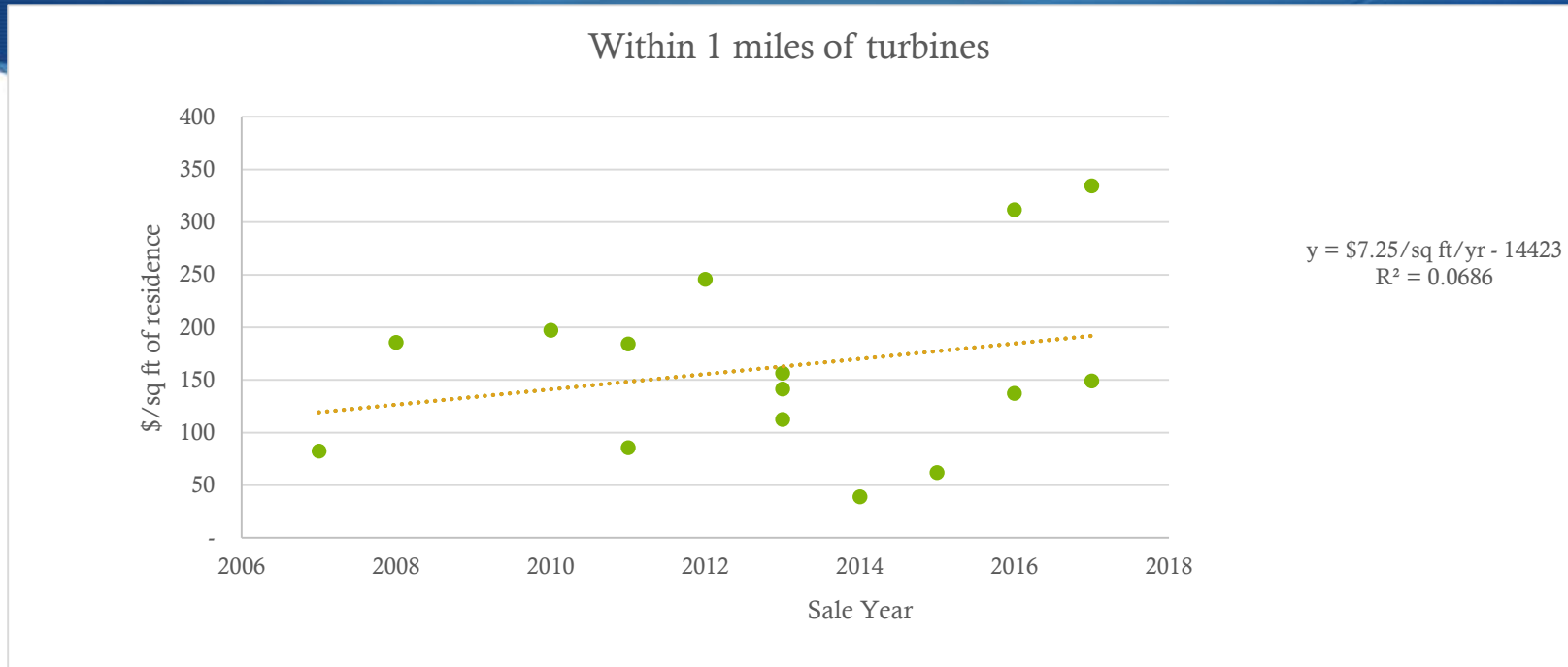
For properties within 5 miles of turbines, the R2 value indicates that there is no statistically significant trend 98.9% of the data is not explained by the trendline. However, if we were to assume that the trendline were significant then homes within 5 miles of turbines have increased in value at an average of \$2.49/sq ft/year.

A Look at the McLean County Data (cont'd.)



For properties within 2 miles of turbines, the R2 value indicates that there is no statistically significant trend and 99.1% of the data is not explained by this trendline. However, if we were to assume that the trendline were significant, then homes within 2 miles of turbines have increased in value at an average of \$2.16/sq ft/yr.

A Look at the McLean County Data (cont'd.)



For properties within 1 mile of turbines, the R2 value indicates that there is no statistically significant trend and 94.2% of the data is not explained by this trendline. However, if we were to assume that the trendline were significant, then homes within one mile of turbines have increased at an average of \$7.25/sq ft/yr.

Conclusions

- ◆ Farmland, because of its expanse and relatively low unit values (compared to urban land) has seldom been found to be affected by wind structures, so long as no material damage can be shown.
- ◆ The value of large parcels in agricultural use (multiple acreage) seem far more likely to be affected by soil quality, crop production and transaction factors (like availability of water and the costs of mortgage financing) than any indirect impacts from wind turbines.
- ◆ Property values in rural areas will be most affected by local employment and the presence of recreational opportunities (summer homes).

Looking forward...

Reconsidering Barriers to Wind Power Projects: Community Engagement, Developer Transparency and Place

Jeremy Firestone¹, Ben Hoen, Joseph Rand, Debi Elliot², Gundula Hubner³, Johannes Pohl¹
College of Earth, Ocean, and Environment, University of Delaware¹, jfire@udel.edu
Survey Research Lab, Portland State University²
Martin-Luther University Halle-Wittenberg³

Energy Analysis and Environmental Impacts Division
Lawrence Berkeley National Laboratory
Electricity Markets and Policy Group

December 2017

💧 An excerpt to this recent study....

“ We find that a developer being open and transparent, **a community being able to influence the outcome, and having a say in the planning process** are all statistically significant predictors of a process perceived as being “fair”, with an **open and transparent developer having the largest effect**. We also find developer transparency and ability to influence outcomes to have statistically significant relationships to a more positive attitude, with those findings holding when aesthetics, landscape and wind turbine sound considerations are controlled for.”