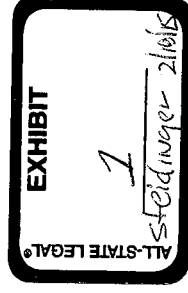


The Impact of Wind Farm Development on Residential Property in Livingston County, Illinois

Presented to the Livingston County Zoning
Board of Appeals - February 17, 2015

By Brad Steidinger, Real Estate Broker



Background Information:

On August 20, 2014 Invenergy, LLC applied for a Special Use Permit on behalf of Pleasant Ridge Energy LLC. This wind farm would generate up to 250 megawatts (MW) of power from 136 GE 1.79-100 wind turbines. The project would be located in southeast Livingston County within the townships of Pleasant Ridge, Forrest, Fayette, Eppards Point, Indian Grove, Chatsworth, Charlotte, Belle Prairie, and Avoca encompassing approximately 58,300 acres.

(Information derived from Special Use Permit Application filed by Invenergy)

Livingston County has a wind farm, owned by Iberdrola Renewables, named The Streator Cayuga Ridge South Wind Power Project. This is a 300 megawatt (MW) wind farm approximately 5 miles southeast of center of Odell, IL. The project consists of 150 wind turbines and reached commercial operation in March, 2010.

(Information derived from Iberdrola Renewables' website)

Objectives & Strategy:

Review Current Pleasant Ridge Exhibits

Offer opinion on property value reports submitted by the applicant.

Residential Home Sale Study

This study utilizes all single family owner-occupied, normal arm's length transactions over a 10-year period, 2004 – 2013, in Livingston County as recorded by the Livingston County Assessor's Office. This data identifies trends and shows net gain or loss to property value through sale transactions while comparing sales before and after wind farm development in Livingston County.

Current Market Conditions

This study provides a snapshot of the current market conditions of the residential real estate market in Livingston County. Statistics were derived from the Livingston County Board of Realtors Database to provide an overall market summary.

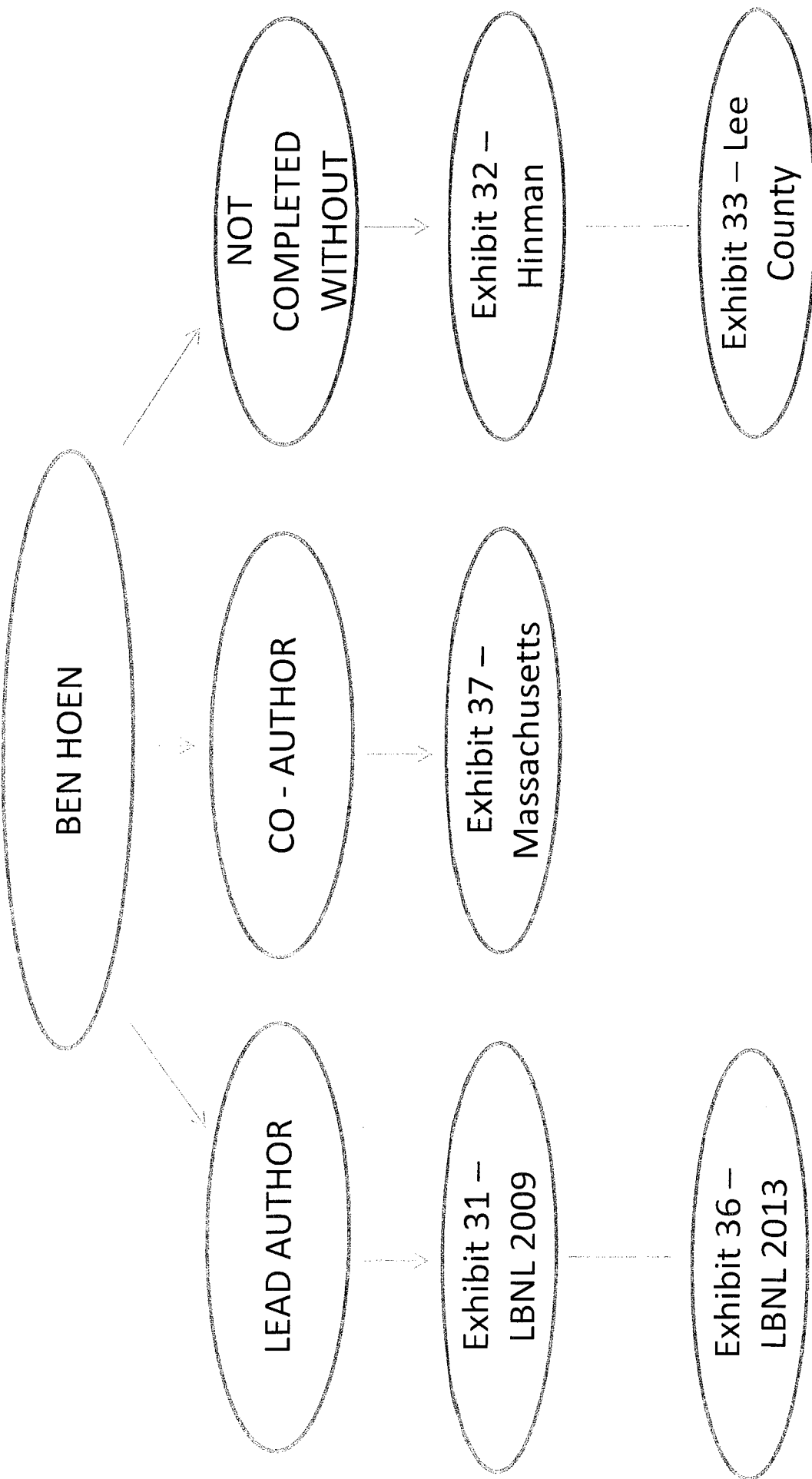
Taxable Effect of Wind Development & Summary

This study will utilize the residential home sales study results to calculate the change in taxable residential property value located near the proposed Pleasant Ridge project.

Pleasant Ridge Exhibits 31-38

- Mark Thayer
 - Presented LBNL studies as co author
 - Professor at San Diego State University
 - Not employed by Dept. of Energy
- Ben Hoen – Lawrence Berkeley National Laboratory
 - “Berkeley Lab is a member of the national laboratory system supported by the U.S. Department of Energy through its Office of Science.” (<http://www.lbl.gov/about/>)

Pleasant Ridge Exhibits 31-38



Pleasant Ridge Exhibits 31-38

Exhibit 34 –
Lempster

Meta - Analysis

Merriam – Webster definition

“A quantitative statistical analysis of several separate but similar experiments or studies in order to test the pooled data for statistical significance”

Wikipedia

“Conducting research about previous research”

1. Exhibit 32 – Hinman
2. Exhibit 35 – Hintzelman & Tuttle
3. Ben Hoen – 2006 New York - partial fulfillment – Master of Science in Environmental Policy – Bard College
4. Exhibit 31- LBNL 2009
5. Exhibit 33 – Lee County
6. George Sterzinger, Frederic Beck, Damian Kostiuik –
- Careful review & comments – Ryan Wiser

Pleasant Ridge Exhibits 31-38

Exhibit 38 –
Rhode Island

Corey Lang to RISEP – Public Stakeholder Meeting # 1 January 17, 2013 (proposed research)

Motivation

- Ben Hoen presentation
- - Didn't necessarily apply to Rhode Island, which is isolated turbines in densely populated areas
- Our goal is to do something similar as Ben Hoen for Rhode Island
- Source: www.thepreeminentdomain.com

“The strongest research to date is a recent report from Hoen et al. (2013), which updates Hoen et al. (2011). They collect over 50,000 transactions within 10 miles of wind farms spanning 27 counties in nine states. They utilize a DD methodology similar to ours with distance bands around the wind farms and both a post announcement and post construction treatment. Similar to our results, Hoen et al. (2013) find no statistical effect of wind turbines on property values.” – (Exhibit 38)

Pleasant Ridge Exhibits 31-38

Exhibit 35 –
Hintzelman & Tuttle

Hintzelman Tuttle	Academic Clarkson University	2011	Upstate NY	Regression Resale & Census Block	1/10 to 3 miles	Varies to > (45%)
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Source: McCann – Property Value Impact & Zoning Compliance Evaluation,
February 10, 2015

“Overall, the results of this study are mixed as regards the effect of wind turbines on property values.”

“When turbines do impact values, the magnitude of this effect depends on how close a home is to a turbine.”

Source: Pleasant Ridge Exhibit 35 Martin D. Hintzelman and Carrie M. Tuttle

Pleasant Ridge Exhibits 31-38

Hedonic Pricing (Regression, Spatial Hedonic, Statistical)

- Primary method of property valuation utilized by the applicant
- Issues and Limitations:
 - The results depend heavily on model specification
 - Large amounts of data must be gathered and manipulate
 - (Source: www.ecosystemvaluation.org)

Pleasant Ridge Exhibits 31-38

- Claim sales volume not effected
 - Only utilizes homes that sold
- Changes from '09 LBNL study to '13 LBNL
 - Added Tom Jackson, Texas A&M – Appraiser
 - Did not consider visibility factor in 2013
- Statistically insignificant
 - Changes in property value have a significant effect on property owners – Example: A \$120,000 home losing 5% = \$6,000 gain or loss
 - Sale, home equity loan, refinancing, short sale

Exhibit 41 - MaRous Cayuga Ridge

- Dataset issues
 - Midwest Real Estate Data (MRED) as data source
 - » No Livingston County Board of Realtors data
 - MRED offered 19% and 15% of the readily accessible assessor’s data for primary sales tables
 - Line graph below – representation of Exhibit 41 Page 8 - Odell sales

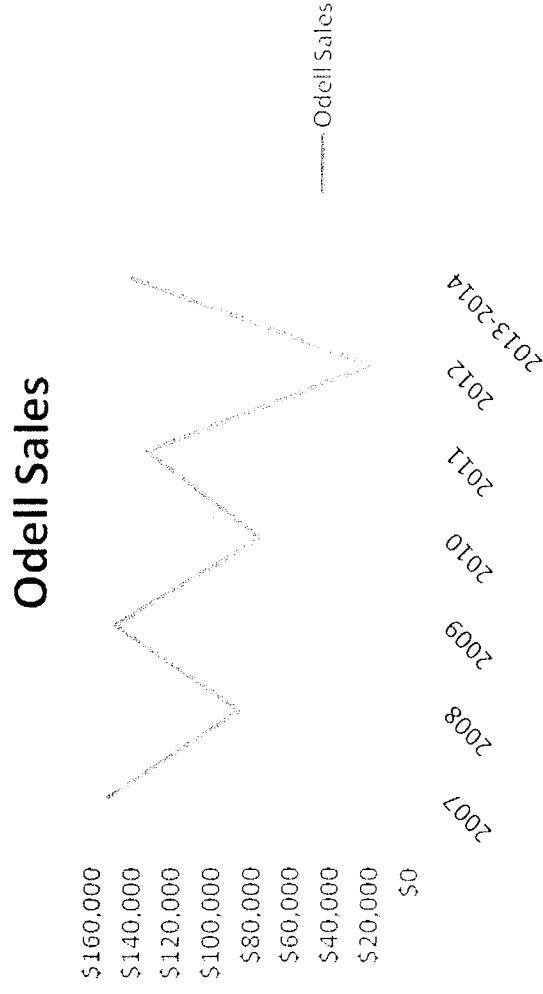
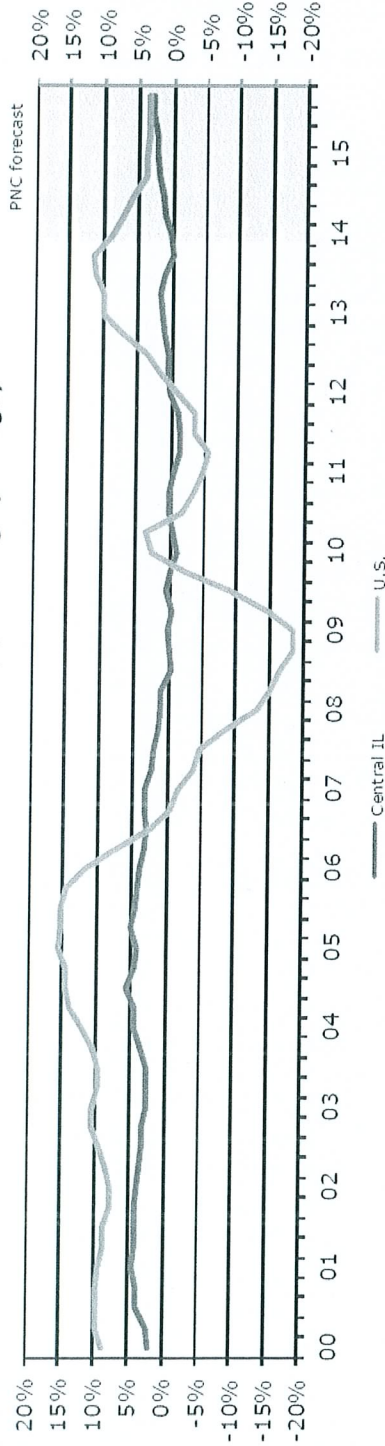


Exhibit 41 - MaRous Cayuga Ridge

LONG-RUN HOUSE-PRICE TRENDS

Chart 7
Case-Shiller House Price Index, (% change year ago)



Tables
from
Pleasant
Ridge
Exhibit 41
Page 5

Chart source: National Association of Realtors; Fiserv, Inc.; The PNC Financial Services Group

		January 1, 2012 Statistics						January 1, 2008 Statistics				
MLS Area	Actives	Average List Price	Under Contract (Ctg.)	Under Contract (Pend)	# of Sales Last 12 mos.	Average Sale Price	MONTHS SUPPLY	MONTHS SUPPLY	Percent Change	Average Sale Price	Percent Change	48 mo SP
Channahon	410	\$ 216,139	16	6	103	\$ 177,911	6.14	9.40	-34.62%	\$ 245,461	-27.52%	
Peotone	458	\$ 230,257	4	2	30	\$ 183,743	10.00	12.60	-20.63%	\$ 247,677	-25.81%	
University Park	5166	\$ 89,844	4	6	36	\$ 79,410	10.17	14.33	-28.99%	\$ 176,326	-54.96%	
Yorkville	560	\$ 316,275	32	5	259	\$ 212,109	5.47	13.58	-59.69%	\$ 309,512	-31.47%	
Zion	60	\$ 117,048	38	14	227	\$ 80,304	7.40	11.32	-34.64%	\$ 152,238	-47.25%	
City of CHICAGO	6000	\$ 311,161	1,038	738	7,710	\$ 233,725	6.36	10.92	-41.79%	\$ 369,463	-36.74%	
TOTALS (all areas in report):	5069	\$ 349,731	6,235	2,576	42,392	\$ 256,420	7.14	9.68	-26.19%	\$ 372,461	-31.16%	
ALL AREAS (including areas not listed above)		\$ 343,892	6,857	2,772	46,423	\$ 251,183	7.34	9.73	-24.62%	\$ 365,211	-31.22%	

Data Source: MRED LLC
Midwest Real Estate Data, LLC
(C) Copyright 2012, A. L. Wagner Appraisal Group, Inc.
www.WagnerAppraisal.com ~ (630) 416-6556

A balanced market typically has a 3.00 to 4.00 months supply. Less than that is undersupplied, more is oversupplied.
Average Sales Price changes may be exaggerated if significant amount of New Construction is reported in the MLS.
Average Sales Price noted from previous year to current year should not be construed as Appreciation - it is percent of change of average sales price.

Exhibit 41 - MaRous Cayuga Ridge

Hired to research and investigate the validity of;

Property values will be affected. According to house sale data derived from the Livingston County Board of Realtors statistics, the average residential property sale value in all of Livingston County was \$97,468 in 2004. Ten years later (2014) it is \$97,269 – a change of less than negative 0.20%. Odell residential house sales averaged \$108,445 in 2004. Ten years later (2014) the average is \$80,375 -A LOSS OF 25.88%. Further study of Odell data shows the highest average house sale value was in 2009 before it dropped substantially over the next several years. The wind farm in Odell was operational in March of 2010! LOSS OF PROPERTY VALUE INCLUDES ALL RESIDENTIAL HOUSE SALES, NOT JUST RURAL FARMS! (Emphasis in original.)

- Mr. Marous said he;
 - Fact checked this statement to the source
 - Determined this to be generally accurate

Alternative “Literature”

- Small, unrepresentative, non-transparent samples
 - Selection process undefined
- Anecdotal information
 - Plural of anecdote is not data
- Combination of sales, appraisals, assessments
 - Lansink (twelve home sales, two areas)
- Vacant land rather than residential homes
 - Kielisch; Gardner; Sunak and Madlener
- Insufficient controls for important influences
- Inappropriate analytical methods

Pleasant Ridge Exhibit 39 – Page 31

Alternative “Literature”

Small, unrepresentative, non-transparent samples – Selection process undefined

-3,699 sales used

-Includes all single family, arm’s length transactions in Livingston County

-No selection – all sales are relevant

Anecdotal information

-Summary is the only opinion shared

Alternative “Literature”

Combination of sales, appraisals, assessments

-Only data source is the Livingston County Assessor’s sales records

Vacant land rather than residential homes

-Must be single family residence

Insufficient controls for important influences

-The market is the greatest influence on residential property (the Buyer)

Inappropriate analytical methods

- Basic approach used by US Census, NAR, HUD

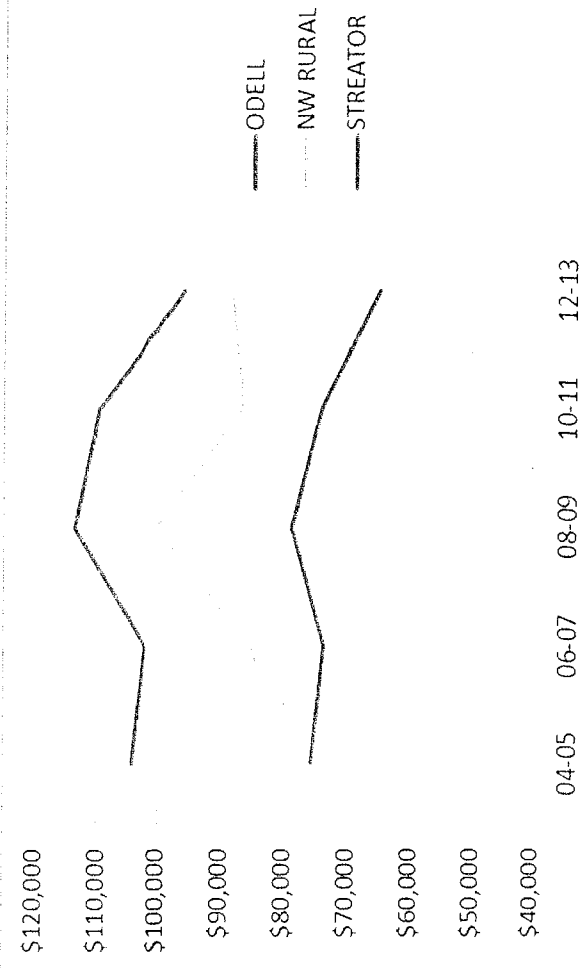
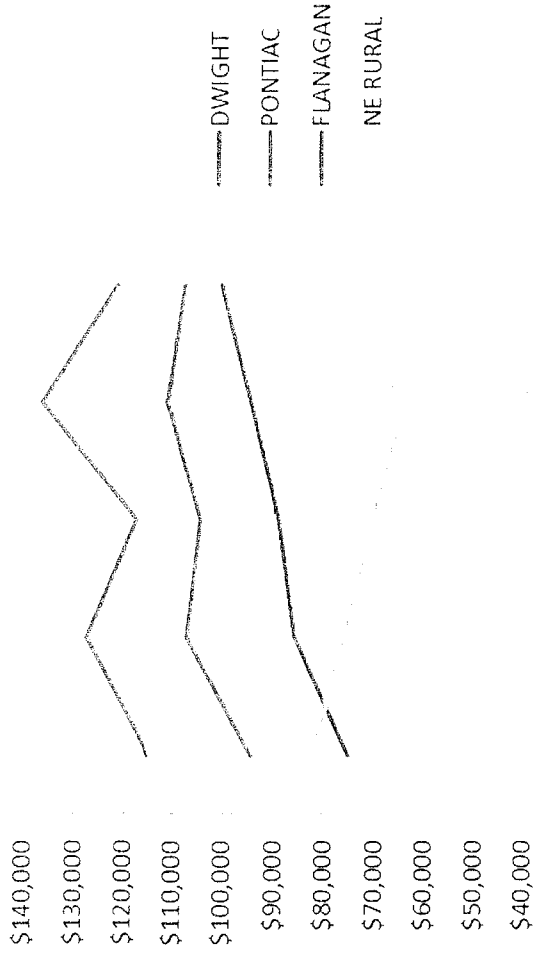
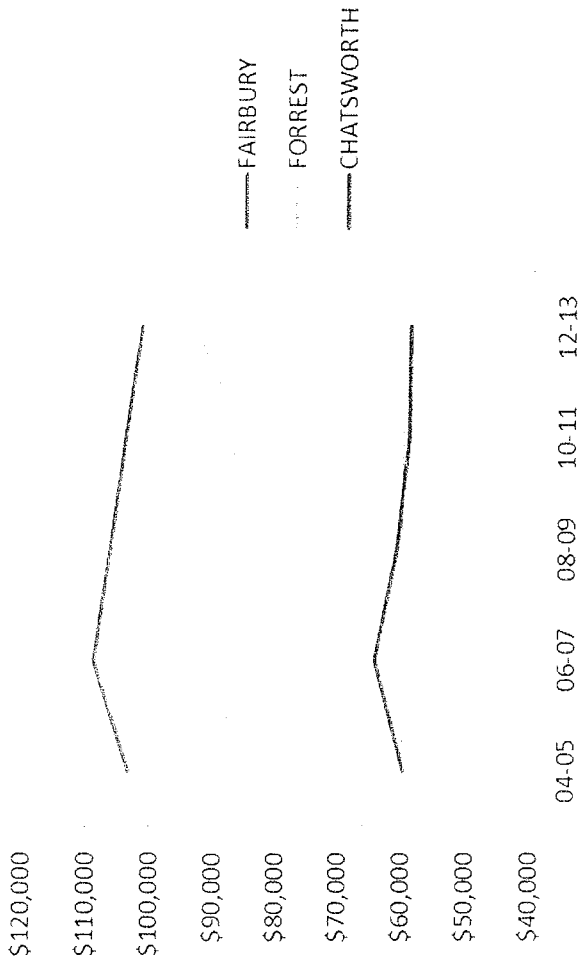
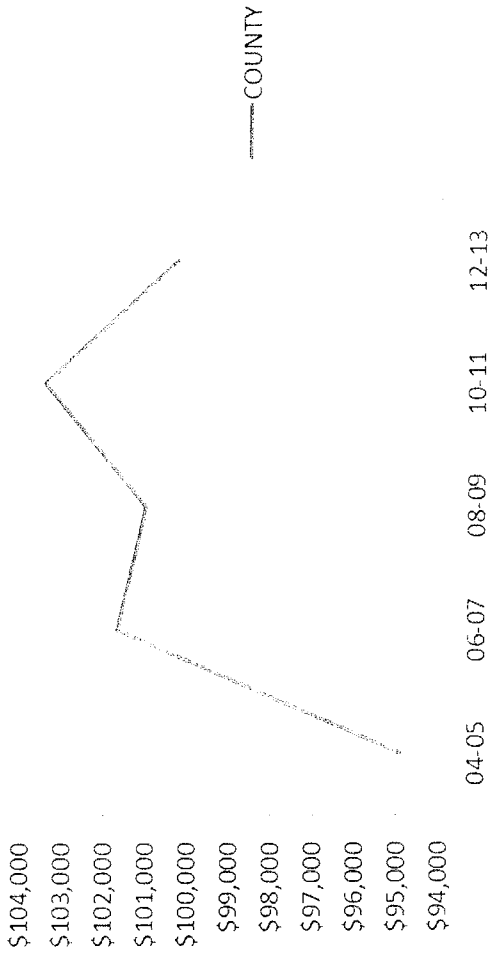
Residential Home Sales

There were 3,699 single family owner-occupied, normal arm's length transactions from 2004 to 2013 in Livingston County. The line graphs show the trends in home sale values in two year increments over this 10 year period. Communities with at least 10 sales in each 2 year period are each shown individually. Smaller markets with less than 10 transactions are grouped together according to geographic location. Cropsey, Strawn, Chenoa, and Gridley are included in the county average but not shown individually or grouped due to the low number of sales (60 total over 10 years) and lack of similar markets nearby.

Residential Home Sale Trends

Average sale price of single family, owner-occupied, normal arm's length transactions.

AVERAGE SALE PRICE



NE Rural consist of Buckingham, Cabery, Campus, Cullom, Emington, Kempton, Saunemin, Reddick

NW Rural consist of Ancona, Blackstone, Cornell, Graymont, Long Point, Manville

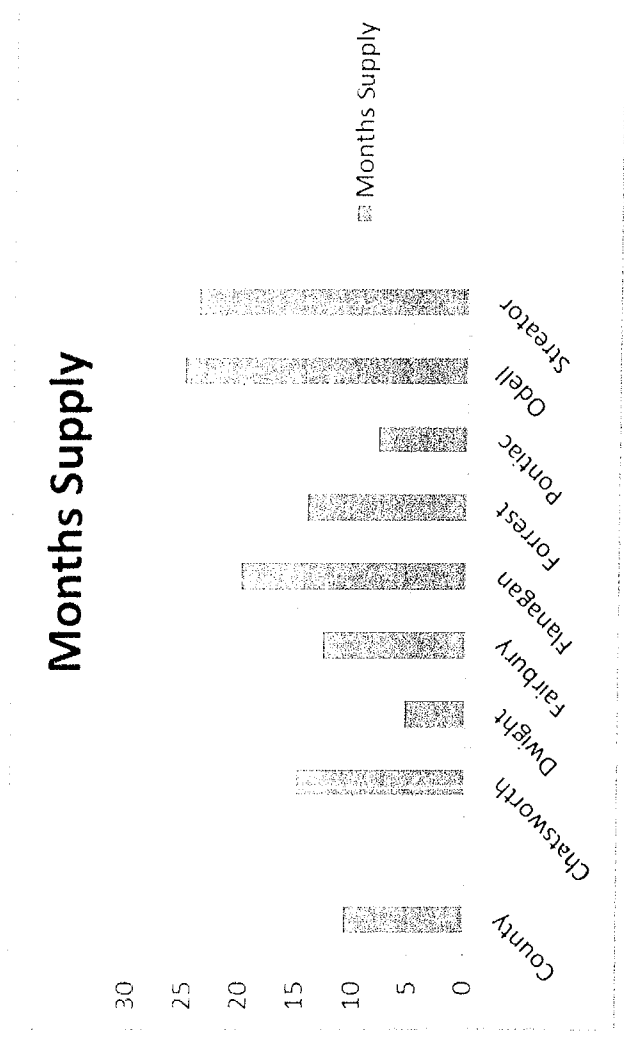
The Streator Cayuga Ridge South Farm became operational in March, 2010. The following table compares home sale prices from the period 2004-2005 to the period 2008-2009 to show the market with no wind farm effect (Pre-Wind). The periods, 2008-2009 and 2012-2013, are compared to show the post operational effect (Post-Wind). Each community or group showed an increase in sale price Pre-Wind with the exception of NE rural. Their decline was offset by an increase Post-Wind for a net gain of 2% over the 10 year period. Streator, Odell, and NW Rural experienced the highest and only double digit losses (in red) Post-Wind at 18%, 16%, and 12% respectively. These three are all located within the footprint of the Streator Cayuga Ridge Project.

	Avg. Home Sale Price '04- '05	% Change	Avg. Home Sale Price '08- '09	% Change	Avg. Home Sale Price '12- '13
All County	\$94,923	6%	\$101,024	- 1%	\$100,274
Chatsworth	\$59,831	2%	\$60,865	- 3%	\$58,818
Dwight	\$114,852	2%	\$117,611	3%	\$121,637
Fairbury	\$103,402	3%	\$106,313	- 5%	\$101,495
Flanagan	\$75,132	19%	\$89,163	13%	\$100,458
Forrest	\$76,079	26%	\$95,986	- 3%	\$92,972
NE Rural*	\$82,449	- 15%	\$70,086	21%	\$84,461
NW Rural*	\$79,121	27%	\$100,246	- 12%	\$88,164
Pontiac	\$94,421	11%	\$104,479	3%	\$107,868
Odell	\$104,423	9%	\$113,595	- 16%	\$95,877
Streator	\$75,534	4%	\$78,728	- 18%	\$64,900

* NE Rural consist of Buckingham, Cabery, Campus, Cullom, Emington, Kempton, Saunemin, Reddick

* NW Rural consist of Ancona, Blackstone, Cornell, Graymont, Long Point, Manville

Current Market Conditions



Months supply equals number of houses on the market divided by average number of homes sold per month (previous 12 months used to accommodate for seasonal variation)

LCBOR data - February 7, 2015

Taxable Effect of Wind Development

Streator Cayuga Ridge Effect

The three communities and areas mentioned earlier as being in the Streator Cayuga Ridge area had a combined average home sale loss of 15.26% or lost \$14,581 each Post-wind. * The 2010 US Census states there are 2706 housing units in the townships of Reading, Newtown, Sunbury, Long Point, Amity, Esmen, and Odell. Assuming an equal loss in value for all homes in the 7 township area, this is net loss of \$39,456,186.

- The loss using the dollars per square foot approach equals a loss of 14.07%

Pleasant Ridge Effect

The Pleasant Ridge wind farm includes the townships of Eppards Point, Avoca, Pleasant Ridge, Charlotte, Indian Grove, Forrest, Chatsworth, Belle Prairie, and Fayette. The 2010 US Census states there are 3684 housing units in this 9 township area. The average home sale price for Fairbury, Forrest, and Chatsworth for the 2012-2013 period was \$92,774.

Projected EAV

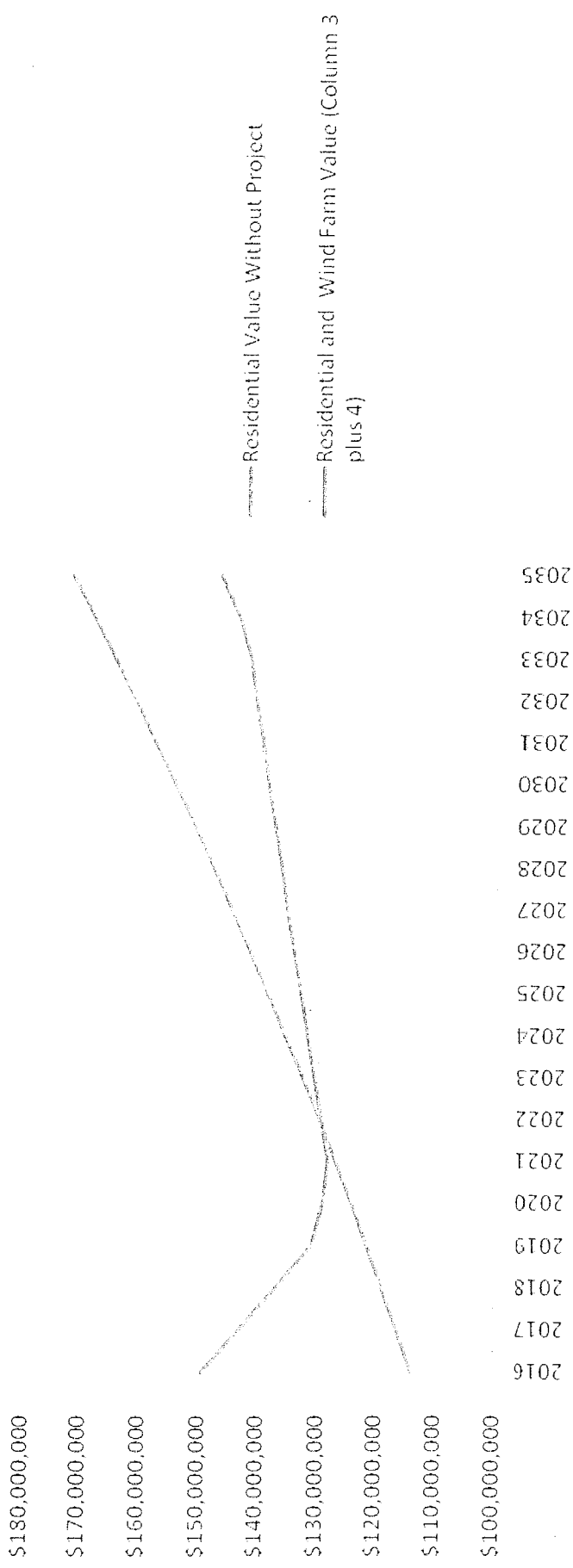
The next table illustrates the potential change in equalized assessed value (EAV) based on the following built in assumptions.

- The wind farm is not constructed and property values in the 9 township area increase by 2.2% per year.
- The wind farm is taxable in 2016 and has a fair cash value of \$106,343,976 the first year followed by a 2.2% inflation adjustment and 4% depreciation each year until it reaches the maximum 70% (Loomis Table 5 Taxable Value of Wind Farm converted to cash basis)
- The 9 township area experiences a 5% loss each of the first 3 years, 1% loss the 4th year, and remains flat the 5th year (cumulative loss of 15.12% - less than the Streator Cayuga Ridge loss of 15.26%)

Projected Taxable Value of Wind Farm and Residential Property

	Column 1 Loomis (Table 5 Taxable Value of Wind Farm)	Column 2 Residential Value With Project	Column 3 Residential and Wind Farm Value (Column 3 plus 4)	Column 4 Residential Value Without Project
2016	\$35,447,992	\$113,926,472	\$149,374,464	\$113,926,472
2017	\$34,778,734	\$108,230,148	\$143,008,882	\$116,432,854
2018	\$34,062,871	\$102,818,641	\$136,881,512	\$118,994,377
2019	\$33,298,678	\$97,677,709	\$130,976,387	\$121,612,253
2020	\$32,484,374	\$96,700,932	\$129,185,306	\$124,287,723
2021	\$31,618,124	\$96,700,932	\$128,319,056	\$127,022,053
2022	\$30,698,037	\$98,828,352	\$129,526,389	\$129,816,538
2023	\$29,722,162	\$101,002,576	\$130,724,738	\$132,672,502
2024	\$28,688,492	\$103,224,633	\$131,913,125	\$135,591,297
2025	\$27,594,954	\$105,495,575	\$133,090,529	\$138,574,306
2026	\$26,439,415	\$107,816,477	\$134,255,892	\$141,622,940
2027	\$25,219,677	\$110,188,440	\$135,408,117	\$144,738,645
2028	\$23,933,473	\$112,612,586	\$136,546,059	\$147,922,895
2029	\$22,578,471	\$115,090,062	\$137,668,533	\$151,177,199
2030	\$21,152,264	\$117,622,044	\$138,774,308	\$154,503,097
2031	\$19,652,376	\$120,209,729	\$139,862,105	\$157,902,165
2032	\$18,076,255	\$122,854,343	\$140,930,598	\$161,376,013
2033	\$16,421,274	\$125,557,138	\$141,978,412	\$164,926,285
2034	\$15,733,633	\$128,319,395	\$144,053,028	\$168,554,664
2035	\$16,079,773	\$131,142,422	\$147,222,195	\$172,262,866
			Total	\$2,823,917,145
				\$2,739,699,635

Projected Taxable Value of Wind Farm and Residential Property



Conclusions:

- By 2022, the EAV without the project will exceed the projected annual EAV with the Pleasant Ridge project.
- Over the life of the project (20 years), the cumulative loss in EAV is projected to be \$84,217,511.
- Any loss in residential property value about 11.54% results in a loss of EAV over the 20 years of the project.

Report Summary

- The Streator Cayuga wind farm is less than 5 years old and wind energy in general is relatively new to Illinois. Over 74% of the 3568 MW capacity in the state of Illinois has been built since January 1, 2009 according to the US Dept. of Energy.
- Perception of wind farms will be a key factor in how much more loss could be realized before the market stabilizes. In my opinion, the gap in property values will widen. Unless the perception of living in or near the footprint of a wind farm improves, there will likely be increasing demand on residential property in counties that place restrictions that directly or indirectly stop or limit the construction of wind farms in their county and decreasing demand in counties that expand this industry.
- The results shown are restricted to existing residential property. New construction will be hindered in the industrial footprint as well. Participating and Non-participating land owners may find their property too close to wind turbines making building a dream home, subdividing, or sale for individual home construction impossible due to the county wind ordinance that regulates turbine setbacks or general safety issues that require additional space.
- Communities that reduce the setbacks from the city or village boundaries discourage any development (residential, commercial, or industrial) in the direction of erected wind turbines. Once the turbines are constructed the area between the city and turbines become a high risk construction area.
- Counties across the state are making their wind ordinances more restrictive to protect property values and guard against other issues. These counties will become the premiere places to build for people desiring to live in a quiet country setting.