UNGARETTI & HARRIS

MUNICIPAL WIND FARMS
"ZONING AND WIND ENERGY"

Prepared For:

ILLINOIS MUNICIPAL LEAGUE

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Chicago, Illinois 60605

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WIND POWER

Wikipedia, the free encyclopedia: wind power is the conversion of wind energy into a useful form, such as electricity, using wind turbines.

Wind energy is plentiful, renewable, widely distributed, clean and reduces greenhouse gas emissions when it displaces fossil fuel derived electricity.

Wind farm is a group of wind turbines in the same location used for production of electric power. Individual turbines are interconnected with a medium (usually 34.5 kV) voltage power collection system and communications network.

U.S. Wind Energy Industry. The U.S. Wind Energy Industry installed 5,244 megawatts in 2007 expanding the nation's total wind power generating capacity by 45% in a single calendar year and injecting an investment of over $9 billion into the economy. The U.S. wind power fleet now numbers 16,818 megawatts and spans 34 states. American wind farms will generate an estimated 48 billion kilowatt hours of wind energy in 2008, just over 1% of U.S. electricity supply, powering the equivalent of over 4.5 million homes.

The American Wind Energy Association ("AWEA") explains that 1 Mega Watt of electricity can power 250-300 homes.

Illinois

As of March 31, 2008, AWEA advises that the power capacity in Illinois was 735.66 Mega Watts with projects under construction which will provide an additional 171 Mega Watts. Illinois ranks 8th in the United States in existing capacity.

DRAFTING A ZONING ORDINANCE

Definitions

+ **Wind Energy Conversion System (WECS).** The system by which wind energy is converted to electricity including wind turbines, towers, support systems, blades and associated controls, and conversion electronics which has a rated capacity over 100 Kilowatts.

+ **Small wind energy conversion system (SWECS).** The system by which wind energy is converted to electricity including a wind turbine, one tower, support system, blades and associated controls, and conversion electronics which has a rated capacity of 10 to 100 Kilowatts or a system height of 35 feet or more.

+ **Mini wind energy conversion system (MINI WECS).** The system by which wind energy is converted to electricity including a wind turbine, one tower, support system, blades and associated control and conversion electronics which has a rated capacity of less than 10 Kilowatts and a system height of less than 35 feet. (Sangamon County, Illinois, *Zoning Ordinance*.)

Legal Framework for Zoning Ordinance

+ **Zoning Enabling Act.** 65 ILCS 5/11-13-1. The Zoning Enabling Act generally provides for the authority of municipalities to regulate the height and bulk of buildings and other structures and to establish set back lines and to generally divide the municipality into a variety of districts and shapes, thereby permitting different types of uses in different districts. There is no specific limitation on Home Rule Municipalities, but in this regard there is no real distinction to be made between Home Rule and non-Home Rule municipalities in regard to the authority to permit different types of buildings and structures within the municipality.

+ **Special Uses And Conditional Uses.** Generally speaking, zoning ordinances which have been passed dealing with this subject have made the wind energy system a special or conditional use or have provided for site specific requirements which would be in the nature of a special use. If done as a permitted use, then the specifications become extremely detailed. 65 ILCS 11-13-1.1 Special Uses.

+ **Exclusionary Zoning Issues.** The effort to exclude wind energy systems.

  One of the most significant problems facing municipalities relates to exclusion of particular uses from a given district or even from the entire municipality.

  It has been generally stated that the municipality does not have the power to wholly restrict a lawful business from its boundaries. People ex rel. Trust Company of Chicago v. Village of Skokie, 408 Ill. 397, 97 N.E.2d 310 (1951). On the other hand, the courts have generally determined whether to exclude a particular use was arbitrary or discriminatory in light of already existing uses of nearby property. City of Chicago v. Sacks, 1 Ill.2d 342, 344 (1953).

+ **Comparison To The Regulation Of Cellular Towers.** It was estimated that the number of cellular towers back in 1996 needed to accommodate the service then was over 100,000. Many communities were opposed to having cellular towers located within their community and Congress passed the Telecommunications Act of 1996. This Act, while affirming local government's right to control the siting, construction and modification of cellular and other wireless communication facilities, required municipalities to hold hearings and make certain findings before a tower could be excluded from a given location. The denial had to be based upon zoning considerations and there had to be a written justification for the denial. See *Illinois RSA #3, Inc. v. County of Peoria*, 963 Fed.Supp. 732 (C.D. Ill. 1997).

  These same type of policy considerations which impacted cellular towers also affects wind energy systems.

+ **Aesthetic Considerations.** Zoning ordinances which include provisions which promote aesthetic purposes have been upheld if the reasonableness of the terms of the ordinance may be sustained on other grounds. These other grounds relate to the protection of property values. See *Neef v. City of Springfield,* 380 Ill.275 (1942).

  The Court in *LaSalle National Bank v. City of Evanston*, 57 Ill.2d 415 (1974) commented:

  "The reason advanced for declining to afford aesthetic qualities significant import is that the subject does not lend itself to exact definition but varies as to personal taste." 57 Ill.2d at 432-433.

+ **Moratorium.** In the case of *Ecogen, LLC v. Town of Italy,* 438 Fed.Supp.2d 149 (W.D. N.Y. 2006), a wind farm developer sued the town under Section 1983 of the Civil Rights Act seeking relief from a moratorium prohibiting construction of wind mills. The Federal District Court upheld the moratorium even though it had extended to two years making the following statement:

  "The development of wind power projects, which convert wind energy into electricity, seems to be on the upswing in this country but that growth has not been universally welcomed … See e.g., Felicity

Barringer, *"Debate Over Wind Power Creates Environmental Rift,"* New York Times, June 6, 2006 at A18.

"As in Don Quixote, where one person sees a windmill, another sees a "monstrous giant" looming over the countryside. This case involves one such proposed project that has met with local opposition."

+ **Environmental Concerns.** What impact do wind farms have on the environment? What law regulates?

Many zoning ordinances dealing with this subject have provisions related to raptors, or birds of prey. The Bald and Golden Eagle Protection Act, 16 U.S.C. Section 668(A) protects against harming a bald or golden eagle "knowingly or with wanton disregard for the consequences."

Likewise, the Migratory Bird Treaty Act, 16 U.S.C. Sections 704, 712 and the Coastal Zone Management Act, 16 U.S.C. Section 1452 which requires an environmental plan to be approved in regard to the siting of electrical generating facilities. The "facilities shall be constructed upon the sites selected to have the least adverse effects practicable on areas used for spawning, nesting, and seasonal migration of wild life species." 31

A recent law suit filed in December of 2007 by the Coastal Habitat Alliance seeks to enjoin construction of wind farms off the Texas coast for violating these environmental standards. *Coastal Habitat Alliance v. Patterson*, United States District Court for Western District of Texas, Austin Division, AO7CA985LY (Dec. 4, 2007).

+ **Specific Provisions.**

- Setback Requirements. This includes setbacks from adjacent property lines as well as overhead utility or transmission lines as well as setbacks from other buildings or structures, usually at least the maximum height or height plus 10%.

- Noise Standards. The issue of noise is raised repeatedly in regard to the grant of special use or conditional use permits and we have used a standard of 65 decibels when measured at any residential, school, hospital, church, or public library building to the windmill structure.

- Height Limitations. Especially insofar as there is an airport in the vicinity. Of course, in this case the Federal Aviation Administration would have to approve the siting so there would be no question of possible interference with the airport. (450 feet in one ordinance.)

- Road Issues. The right of the developer to use existing roads would seem clear, but many communities require road maintenance agreements as part of the wind farm agreement so that the roads are repaired following the construction of the wind farm at the expense of the developer.

- Interconnections. The WECS developer has to provide for interconnections to an electric transmission grid which might very well mean the electrical power lines existing along right-of-ways. This raises the whole other issue of the right of the municipality to charge for the use of its right-of-ways. In this regard see the Electricity Infrastructure and Maintenance Fee Law, 35 ILCS 645. The Statute provides 35 ILCS 645/5-2:

  "This law is intended to create a uniform system for the imposition and collection of fees associated with the privilege of using the public right-of-way for the delivery of electricity."

Section 645/5-4 provides:

"A municipality shall be entitled to require a franchise contract from an electricity deliverer as a condition of allowing the electricity deliverer to use any portion of any public right-of-way within the municipality for the placement and maintenance of facilities for distributing, transmitting or delivering electricity. Such franchise contract shall be established by ordinance and shall be valid and accepted in writing by the electricity deliverer."

Wind Energy generally is wholesale and uses the existing retail lines.

- Does the grant of zoning also include the transmission lines and their location? In this regard one of the issue to be considered is what is actually being approved by the municipality. In some cases the plan for the development of the wind farm also includes the location of power lines to be run on private property for extended distances. For example, we have provided "such transmission lines and appurtenances may also be located on any other real property for which licenses, easements, leases, rights-of-way or similar land rights have been obtained by developer." [This is in addition to the public right-of-way.]

- Form of application. Where the approval is in the form of a conditional use permit or special use, the application can be quite detailed. Generally speaking it relates not just to the details of the project but also the qualifications and experience of the developer. Usually a site plan is required similar to the type of site plan one might find for a planned unit development.

- Decommissioning. The issue of decommissioning has become an important one when negotiating an agreement with a developer. It involves the removal of the turbines and equipment from the project site and restoring the site to its original condition. Usually issues arise as to posting of a bond or Letter of Credit and how much of a bond or Letter of Credit has to be posted to assure the cost of the decommissioning? Many developers maintain that the projected salvage value of the turbines and other equipment exceeds the cost of the decommissioning.

APPENDIX

resources

U.S. Wind Energy Projects - Illinois

(as of 6/30/2008)

State: Illinois

Power Capacity - Existing projects (MW):	735.66
Power Capacity - Projects under construction (MW):	171
Rank In US (by Existing Capacity):	8
Rank In US (by Potential Capacity):	16
Potential Capacity (in MW):	6980
Annual Energy (in billion kWh):	61

Status: Existing

Sort table by a specific column by clicking on its heading.

Name	Location	Power Capacity (MW)	Units	Turbine Mfr.	Developer	Owner	Power Purchaser	Year Online
Twin Groves II (08)	McLean County	36.3	22	Vestas	Horizon Wind Energy	Horizon Wind Energy	Constellation Energy	2008
Camp Grove Wind Farm	Marshall & Stark Counties	150	100	GE Energy	OEG (Orion Energy Group)	OEG (Orion Energy Group)	AEP-Appalachian Power	2007
Twin Groves II (4Q07)	McLean County	161.7	98	Vestas	Horizon Wind Energy	Horizon Wind Energy	Constellation Energy	2007
GSG Wind Farm	Lee and LaSalle Counties	80	40	Gamesa	FPC Services	Babcock & Brown		2007
Sustaiable Technologies Museum		2.5	1	Clipper	FPC/GSG wind	GSG 3, LLC	ComEd	2007
Twin Groves I	McLean County	198	120	Vestas	Horizon Wind Energy			2007
Crescent Ridge	Bureau County	54.45	33	Vestas	Illinois Wind Energy/Eurus	Babcock & Brown/Eurus	Exelon	2005
Illinois Rural Electric Cooperative	Pike County	1.65	1	Vestas	Illinois Rural Electric Cooperative	Illinois Rural Electric Cooperative	Illinois Rural Electric Cooperative	2005
Bureau Valley School District	Bureau Valley	0.66	1	Vestas	Engineers Architects Professional Corp.	Bureau Valley School District	Bureau Valley School District	2004
Mendota Hills		50.4	63	Gamesa	Navitas Energy	Babcock & Brown	Exelon	2003

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U.S. Wind Energy Projects - Illinois

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Potential Capacity (in MW):	6980
Annual Energy (in billion kWh):	61

Status: Under construction

Sort table by a specific column by clicking on its heading.

Name	Location	Power Capacity (MW)	Units	Turbine Mfr.	Developer	Owner	Power Purchaser	Year Online
Grand Ridge Wind Farm	La Salle County	99	66	GE Energy	Invenergy	Invenergy		
Providence Heights	Bureau County	72	36	Gamesa	Iberdrola Renewables	Iberdrola Renewables		

More Project Data (spreadsheets)

Project Definitions

Projects Home

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UNGARETTI & HARRIS

PORTION OF RESOLUTION FOR CONDITIONAL USE PERMIT FOR WIND ENERGY CONVERSION SYSTEMS

WIND ENERGY CONVERSION SYSTEMS

Definitions

+ **Wind Energy Conversion System (WECS).** An electrical generating facility comprised of one wind turbine and accessory facilities, including but not limited to: power lines, transformers, substations, and meteorological towers that operate by converting the kinetic energy of wind into electrical energy. The energy may be used on-site or distributed into the electrical grid. "WECS" includes the transmission lines and appurtenances that run from the WECS or accessory facilities to the point of interconnection with the electric power grid of an electric utility or regional transmission organization, including any such transmission lines or appurtenances that traverse property outside the boundaries of the Conditionally Permitted Zone, provided such transmission lines and appurtenances are located within County road right-of-ways or within any other real property for which licenses, easements, rights-of-way or similar land rights have been obtained. The County's approval of any WECS shall also constitute the County's approval of the routes of any such transmission lines and approval of the use by such approved WECS of County road right-of-ways for transmission lines and appurtenances.

+ **Commercial WECS.** A WECS of greater than 150 kW in total nameplate generating capacity and/or is 120 feet in total height and includes offsite transmission lines. Lattice type Turbine Towers or meteorological towers and guyed towers/poles are permitted on Commercial WECS in Hamilton County.

+ **Non-Commercial WECS.** A WECS of 150 kW or less in total nameplate generating capacity and/or is 120 feet in total height or less. Lattice type Turbine Towers and meteorological towers and guyed towers/poles are permitted on Non-Commercial WECS in Hamilton County.

+ **Fall Zone.** An area surrounding a Turbine Tower base the boundaries of which are defined as the furthest distance from the Turbine Tower base that the WECS will collapse in the event of a structural failure. This area is no less than the total height of the structure.

+ **Project Development Plan.** The Project Development Plan means the plan provided for and required under Section 1 of this Resolution.

+ **Turbine Tower.** The steel tower supporting a wind turbine, but not including the foundation, nacelle or blades.

Development and Safety Requirements

+ With respect to each turbine, the lowest point of each wind turbine generator rotor blade shall be at least 50 feet above ground level at the base of the Turbine Tower.

+ If the WECS is interconnected to an electric transmission grid, the WECS shall meet the applicable requirements for interconnection and operation set forth in the electric utility's or regional transmission organization's then current service regulations.

+ Any new roads required for the Project will be private roads and Developer will be responsible for the construction and maintenance thereof.

+ Developer shall be responsible for repairing any damage caused to the county roads and/or rights-of-way resulting from Developer's use in connection with the construction of the Project, decommissioning or operation and maintenance activity related thereto.

+ The minimum setback distance between each WECS and all overhead utility or transmission lines, other WECS, electrical substations, meteorological towers, public roads, road right-of-way boundary, and other structures shall be no closer than a distance calculated by multiplying the height of the WECS by 1.10. Unless conclusive evidence exists to the contrary, the public road right-of-way is presumed to be a total width of thirty (30) feet.

+ No Turbine Tower for the Project shall be located closer than a distance calculated by multiplying the height of the turbine multiplied by a factor of 1.10 from the property line of any adjoining property which is titled in the name of a different owner than that of the land on which the Project is located unless such adjoining property owner provides written permission allowing for a lesser distance.

+ No Turbine Tower for the Project shall be located closer than 1,000 feet from an existing (at the time of the building permit issuance or notice from the building code enforcement officer that no building permit is required) residential structure unless such residence owner provides written permission allowing for a lesser distance. Further, no Turbine Tower shall be located closer than a distance calculated by multiplying the total height of turbine by a factor of 1.10 from an existing (at the time of the building permit issuance or notice from the building code enforcement officer that no building permit is required) outbuilding with poured concrete foundation of a depth of at least 18 inches, unless such outbuilding owner provides written permission allowing for a lesser distance measured from the center point of the base of the turbine.

+ High voltage transmission lines and appurtenances between any substation to be located on the Project site and the substation or other point of interconnection to the electric transmission grid will be installed above ground. Such transmission lines and appurtenances may be constructed and located by Developer within county rights-of-way at no additional charge to Developer for the life of the Project. Such transmission lines and appurtenances may also be located on any other real property for which licenses, easements, leases, rights-of-way or similar land rights have been obtained by Developer.

+ Audible noise due to WECS operations shall not exceed 65 decibels for any period of time, when measured at any residential, school, hospital, church or public library building existing on the date of approval of the WECS.

+ The Project shall operate in conformance with Federal Communications Commission ("FCC") regulations.

+ WECS shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the WECS.

+ All Turbine Towers shall be industry-standard white, gray or another non-obtrusive color with finishes that are matte or non-reflective. Blades may be black in order to facilitate de-icing.

+ To the extent practicable, Turbine Towers shall avoid the creation of artificial habitat for raptors or raptor prey.

+ There shall be no lights affixed to the external portions of the Project's Turbine Towers other than those required by the Federal Aviation Administration (the "FAA") or any other applicable authority. Such restriction shall not apply to infrared heating devices used to protect the Project's wind

monitoring equipment or any other lighting required for the safe operation and maintenance of the Project.

+ Upon commercial operation of the Project, Developer shall provide the County with evidence of insurance carried by Developer for the Project.

District Regulations

Wind Energy Conversion Systems (WECS) shall be permitted, conditionally permitted or not permitted based on the land use district as established in the table below:

District	Non-Commercial WECS	Commercial WECS
(A) Agriculture	Permitted	Conditionally Permitted
(RR) Rural Residential	Conditionally Permitted	Conditionally Permitted
(R-1) Single Family Resid	Conditionally Permitted	Not Permitted
(V-1) Village	Not Permitted	Not Permitted
(FP) Floodplain	Conditionally Permitted	Conditionally Permitted

Project Development Plan

+ The Project Development Plan shall contain the following information:

  - Developer shall provide information on the following:

  - Name of the Project;

  - Name and address of Developer and a statement from Developer providing relevant information regarding:

    - An overview of Developer;
    - Qualifications and experience of Developer in commercial wind energy development; and
    - Financial information regarding Developer's ability to develop, construct, operate and maintain the Project.

  - Summary Project information including:

    - Project description;
    - Project schedule; and
    - Phases of development and possibilities for future expansion.

+ Developer shall submit a site plan with the following specifications:

  - Scale of 1" = 2000';

  - Scale and north point (up);

  - Boundaries of Project site by legal description;

  - Adjoining public roads;

  - Houses within 1000' of the Project site boundaries;

  - Acreage of Project site;

  - Schematic of zones suitable for the installation of turbine, electric collector and transmission lines, electrical equipment, substations, maintenance roads and other associated facilities; and

- Schematic of proposed location of transmission lines and any underground pipeline and other utility easements required in connection with the Project.

Decommissioning

Within eighteen (18) months of termination of commercial operation of the Project, Developer shall remove all turbines and equipment from the Project site and shall remove the turbines' foundations to a depth of four (4) feet below the ground surface. Access roads shall be removed if required by the owners of the land upon which the Project is located and the ground shall be restored as close to its original condition as is commercially practicable. The requirement to remove access roads shall not apply to roads in existence before the Project construction commenced. The owner of any portion of the Project site upon which an access road has been located may elect to have access roads left intact and in such event, Developer shall have no obligation (i) to remove such roads as part of the decommissioning plan or (ii) maintain such roads upon the completion of decommissioning.

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