


Wind Energy: Incentives and Regulations

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Wind Energy: Incentives and Regulations

Why Should We Study the Regulation of Wind Energy Systems?

- Economic Incentives
- Legislative Priorities
- Meteorological Conditions

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2

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Economic Incentives

- State of Illinois
 - The State believes* that increasing investment in renewable energy resources, energy efficiency and alternative energy production will increase total economic output in Illinois by:
 - \$4.7B by 2012
 - \$18B by 2020
 And create 191,000 new jobs by 2020
 - Primarily grants to stimulate investment

Source: Economic & Environmental Impacts of Clean Energy Development in Illinois, Illinois DCEO, 2005

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3

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Economic Incentives

- Solar & Wind Energy Rebate Program
 - Offers homeowners and businesses incentives up to 30% of total project cost for small-scale solar and wind energy systems (Public sector and NFP entities eligible for 50%)
- Community Renewable Energy Program
 - This grant targets medium-scale renewable energy projects that provide energy for self-consumption by governments, electric cooperatives and NFPs
- School Wind and Solar Generation Program
 - Full or partial low-interest loans for engineering and feasibility studies and construction costs

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Economic Incentives

- Federal Government
 - **Primarily Tax Credits aimed at increasing:**
 - Commercial Production
 - Residential Investment

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Economic Incentives

- Commercial Production
 - Renewable Electricity Production Credit
 - Qualified Investment Credit Facility
 - Qualified Advanced Energy Facility
- Residential Investment
 - Residential Energy Efficient Property Credit

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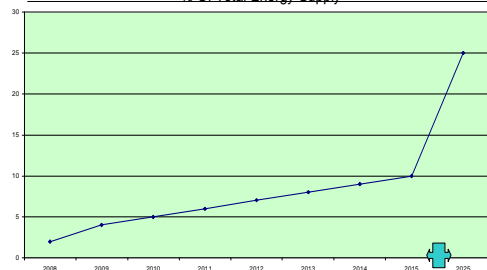
Legislative Priorities

State of Illinois

- **Renewable Portfolio Standard**
 - A Quota system applicable to the supply of energy in the State
 - Applicable to both incumbent energy utilities and alternative retail electric suppliers (ARES)
 - 60% of renewable energy resources procured by ARES shall come from Wind Generation
 - If available, 75% of renewable energy resources procured by incumbents shall come from Wind Generation

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% Of Total Energy Supply



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Legislative Priorities

State of Illinois

- **Environmental Disclosure**
 - Electricity suppliers must provide quarterly disclosures regarding the source of their energy supply
- **Educational Programs**
 - Schools and Colleges are empowered to create "green" curricula to develop labor pool and scientific/technical expertise

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Meteorological Conditions

- **How Does Wind Speed Correlate to Energy Production?**
 - Doubling wind speed from 10 mph to 20 mph results in an 8x increase in energy potential
 - In general, an annual average wind speed of at least 14.3-15.7 mph at 50 meters is desirable.

Source: Illinois Institute for Rural Affairs

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Meteorological Conditions

- **What do Large Wind Turbines Need?**
 - Minimum Annual Average of 11-12 mph at 30 meters above ground
 - Proximity to High Voltage Electricity Distribution Grid

Source: Illinois Institute for Rural Affairs

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Meteorological Conditions

- **What do Small Wind Turbines Need?**
 - Average Monthly Electric Bills > \$150
 - Unobstructed source of wind
 - Long payoff time

Source: Illinois Institute for Rural Affairs

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How Will Local Regulations Impact Your Wind Energy Systems?

- Municipal Code
- Counties Code
- Highway Authority
- Intergovernmental Cooperation
- Ownership

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Illinois Municipal Code

○Sec. 11-13-26. Wind farms.

○A municipality may regulate wind farms and electric-generating wind devices *within its zoning jurisdiction and within the 1.5 mile radius* surrounding its zoning jurisdiction.

○There shall be at least one public hearing not more than 30 days prior to a siting decision by the corporate authorities of a municipality. Notice of the hearing shall be published in a newspaper of general circulation in the municipality.

○A municipality may allow test wind towers to be sited without formal approval by the corporate authorities of the municipality. Test wind towers must be dismantled within 3 years of installation.

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Illinois Municipal Code

○Sec. 11-13-26. Wind farms.

○A municipality may not require a wind tower or other renewable energy system that is used exclusively by an end user to be **setback more than 1.1 times** the height of the renewable energy system from the end user's property line.

○Home Rule Preemption of setback limitation

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Illinois Municipal Code

○What if 2 municipalities are both within 1 ½ miles from the proposed wind farm?

- Statute is Silent
- Compare to Planning Jurisdiction Statute; 65 ILCS 5/11-12-9

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Counties Code

○Sec. 5-12020. Wind farms.

- A county may establish standards for wind farms and electric-generating wind devices. The standards may include, without limitation, the height of the devices and the number of devices that may be located within a geographic area.
- A county may also regulate the siting of wind farms and electric-generating wind devices in unincorporated areas of the county outside of the zoning jurisdiction of a municipality and the 1.5 mile radius surrounding the zoning jurisdiction of a municipality.
- There shall be at least one public hearing not more than 30 days prior to a siting decision by the county board. Notice of the hearing shall be published in a newspaper of general circulation in the county.

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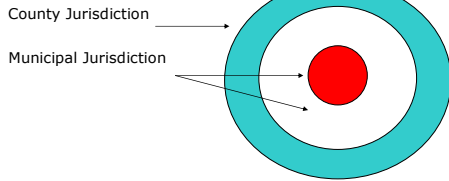
Counties Code

○Sec. 5-12020. Wind farms.

- Counties may allow test wind towers to be sited without formal approval by the county board. Test wind towers must be dismantled within 3 years of installation. For the purposes of this Section, "test wind towers" are wind towers that are designed solely to collect wind generation data.
- Any provision of a county zoning ordinance pertaining to wind farms that is in effect before the effective date of this amendatory Act of the 95th General Assembly may continue in effect notwithstanding any requirements of this Section.
- A county may not require a wind tower or other renewable energy system that is used exclusively by an end user to be setback more than 1.1 times the height of the renewable energy system from the end user's property line.

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Comparative Jurisdiction



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Zoning Moratorium

- Suspends ability for property owners to apply for authority to erect improvements within the scope of the moratorium
- Requires Public Hearing – “Amendment to Zoning Code”
- *Ecogen, LLC v. Town of Italy, et al.*, 438 F.Supp.2d 149 (W.D. NY 2006)

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Concerns for Local Officials

- Safety
- Decommissioning
- Aesthetics
- Neighboring Properties



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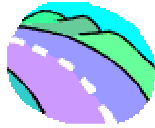
o Safety - Design

- Require certificates of design compliance from one of several 3rd party reviewing agencies.
- Require additional certification by engineer, considering soil and climate conditions.
- Require braking system to automatically prevent rotation speed in excess of design limits.

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o Safety - Highways

- **Multiple Jurisdictions**
 - o State
 - o County
 - o Municipal
 - o Township
- Large Scale Wind Energy Systems can have material impacts on local highway system
- Regulations should consider impacts and design means to address same



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o Safety - Highways

- **Road Use Permits**
 - o 625 ILCS 5/15-301.
 - o Governmental body with jurisdiction over road may issue special permit authorizing applicant to exceed maximum size and weight under Highway Code.
 - o Applicant is responsible for maintenance.
 - o Duty of applicant to establish that load consists of single, non-divisible object that cannot be readily dismantled.
 - o Permit may designate routes, limit number of trips, set seasonal or time restrictions, etc., when necessary to prevent undue damage.
 - o Government may require security to compensate for damage.

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- Safety – Highways
 - Road Use Permits (continued)
 - Permit must be written and carried in the vehicle to which it refers at all times, subject to inspection by police officers or authorized agents of the government with road jurisdiction.
 - Permit fees shall be collected from applicant, in amounts designated in Highway Code, which are designed to compensate for wear and tear. 625 ILCS 5/15-302.

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- Safety – Highways
 - Road Use Liability, 625 ILCS 5/15-318
 - Violation of permit terms shall constitute a petty offense, but shall not automatically terminate permit.
 - However, off-route transportation equates operating without permit, and a new permit is required to resume use of authorized route.
 - Any person driving a vehicle upon a highway is liable for all damage that the highway may sustain as a result of illegal operation, OR if such driver is exceeding maximum dimensions or weight, even when authorized by permit.
 - Measure of liability is cost of repair.
 - Security provided may offset such liability.

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- Safety – Highways
 - Road Agreements
 - Memorialize responsibilities for pre-development road condition survey, necessary access roads, drainage study, upgrades to roads and intersections, attorney fees, etc.
 - Require insurance naming governmental body as insured and indemnification provisions.
 - Establish duties of Governmental Body (snow, marking, etc.).
 - Detail maintenance and post-construction duties, and escrow funds for same.
 - Cover other specifics (utilities, seasonal use).
 - Set a decommissioning plan (more later).

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- oSafety – Fire and Police Coordination
 - The wind farm developer should be required to:
 - o Train fire and police personnel to ensure effective emergency response;
 - o Provide fire department or district with site plan;
 - o Comply with all applicable fire regulations; and
 - o Remove all fuel sources (plants) from immediate vicinity of electrical connections.

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- oSafety - Access
 - Warnings and Climb Prevention
 - Warning signs should be required at base of all equipment.
 - Flags, reflectors and other warning indicators should be required on wires and other reachable dangers.
 - Fences and anti-climbing devices should be required around any climbable structures.



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- Decommissioning Plan
- oProtection to regulatory body:
 - End of Project Life (20-30 years for most)
 - Wind farm developer abandons the project
- oPlan should contain provisions regarding the removal of structures and the restoration of the land/vegetation.
- oFinancial assurance should be secured, with regulatory body as beneficiary.



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- Aesthetics and Neighboring Properties
 - Color and Lighting ("Flicker")
 - Towers and blades must be painted with a dull, non-reflective color.
 - Lighting must comply with FAA regulations for airplane safety, and a compliance permit from the FAA must be provided.
 - Of course, safety and FAA compliance are paramount, but provided standards are met, design should minimize visual effect and "flicker".

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- Aesthetics and Neighboring Properties
 - Height Limitations
 - Balancing Act.
 - The higher the blades, the more effective the turbine is at energy production.
 - The higher the blades, the greater the visual effect.
 - Sound
 - How do you differentiate sound attributable to wind turbine from ambient noise
 - Do you have the tools needed to measure sound?

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Intergovernmental Cooperation

- Scale of Wind Farms may require regulation by more than one zoning and highway authority
- Two or more municipalities which share the same extraterritorial jurisdiction may share their zoning authority
- Municipalities may coordinate their highway authority to promote consistency
- Cooperation may facilitate investment by easing the regulatory burdens

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Ownership

- Counties, Municipalities, School Districts and Community Colleges are each authorized to own and operate a wind turbine farm
- Individually or Jointly
- Self-Consumption or More
- Public/Private Partnerships

QUESTIONS?