



Zoned Out: An Analysis of Wind Energy Zoning in Four Midwest States

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Introduction

Zoning is a common form of land use control. In 1926, the Supreme Court upheld the constitutionality of zoning as a valid exercise of police power as long as it promoted public health, safety, morals, or general welfare.¹ Another purpose of zoning is to “encourage the most appropriate use of the land.”² Zoning legislation seeks to accomplish these objectives by encouraging appropriate land uses, stabilizing and preserving property values and preventing the overcrowding of land.

There are several types of zoning classifications, including residential, commercial, industrial and agricultural. This paper focuses on wind energy zoning, specifically for commercial wind energy facilities. The need for efficient wind energy zoning is becoming more prominent as wind power generates increasingly more of the United States’ total electricity each year.

Wind power was the fifth largest electricity source in the United States in 2013, generating 4.13 percent of total electricity.³ Wind power’s contribution to the United States’ electricity generation portfolio is expected to increase as wind energy development continues to grow. At the beginning of 2014, there was 12,000 megawatts of wind energy capacity under construction.⁴ Growth of the wind energy sector creates

¹ *Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926).

² *City of Richmond v. Board of Supervisors of Henrico County*, 199 Va. 679, 686 (1958).

³ "American Wind Power Reaches Major Power Generation Milestones in 2013." American Wind Energy Association, 5 Mar. 2014. Web. 13 Sept. 2014.

<<http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=6184>>.

⁴ *Id.*

jobs, tax revenues, and overall economic growth for a state.⁵ As wind energy development increases, it is critical for government officials to have effective wind energy zoning in place.

Part I of this paper outlines the various approaches to wind energy zoning practiced in the United States. Part II reviews current methods of regulating wind energy development in the Midwest, including the states of Iowa, Minnesota, Wisconsin, and Nebraska. Part III analyzes state and local control of wind energy regulations and recommends a combination of state and local governance of wind energy facilities for developing effective commercial wind energy zoning ordinances that encourage wind energy development.

I. MODELS OF WIND ENERGY ZONING

Efficient wind energy zoning regulations are vital to the progression of wind energy development. Except when a proposed wind energy project is on federal lands or when special laws apply, such as the Federal Aviation Administration rule that limits the height of turbines around airports, wind energy zoning is not regulated at the federal level.⁶ Instead, the majority of states have some method of regulating wind energy facilities.

However, there is little consistency throughout the United States in regards to wind energy zoning. Wind energy facilities are regulated by local or state policymakers and sometimes both, depending upon the location of the proposed project.

⁵ Wei, Max, Shana Patadia, and Daniel M. Kammen. "Putting Renewables and Energy Efficiency to Work: How Many Jobs Can the Clean Energy Industry Generate in the US?" *Energy Policy* 38.2 (2010): 919-31. Web. <<http://www.sciencedirect.com/science/article/pii/S0301421509007915>>.

⁶ 49 USCS § 44718

There are numerous components to consider when drafting regulations for wind energy facilities. Whether zoning is addressed locally, state-wide, or at both levels, policymakers set guidelines for issues, such as setbacks, noise, aesthetics, wildlife, safety considerations, health concerns, shadow flicker, ice throw and other nuisances.

The Environmental Law Institute identified six governance approaches to wind energy zoning, based on the amount of local influence. These approaches are local siting with local autonomy, local regulation with a defined scope, dual authority with independent decisions, dual authority with state preemption, state zoning incorporating local requirements, and purely state siting.⁷

a. Local siting with local autonomy

Under the local siting with local autonomy model, local governments have the ultimate power to establish wind energy ordinances and are not restricted by state law. State constitutional provisions and enabling legislation allow for local governments to regulate wind energy zoning. Local rules control when there are no explicit state moratorium regarding wind energy.⁸

This approach, which is the most deferential to local interests, may hinder wind development in a local jurisdiction because local opposition could result in the adoption of stringent zoning regulations, making it extremely difficult for wind energy developers to abide by them. On the other hand, there may be strong support for wind energy development in a locality, which would facilitate rapid approval of a wind

⁷ McElfish, James M., Jr. and Gersen, Sara, (2011), State Enabling legislation for Commercial-Scale Wind Power Siting and the Local Government Role, Environmental Law Institute, Washington, D.C.
<http://www.elistore.org/Data/products/d21-02.pdf>.

⁸ *Id.*

energy project. Overall, this model bolsters community interests, but provides less uniformity within a state.

b. Local regulation with a defined scope

The local regulation with a defined scope approach is when local governments regulate wind energy development, but these ordinances are subject to state statutes that restrict the scope of local control.⁹ Limitation of local governance of wind energy zoning is warranted in states where there is a desire to encourage wind energy project. Furthermore, state guidance can resolve issues that are better settled at a higher level of government. This form of constrained local regulation provides more regulatory predictability while allowing some local control up to certain extent.

c. Dual authority with independent decisions

The third approach, which is dual authority with independent decisions, requires wind facility developers to satisfy both state and local standards before they start to build a wind energy project.¹⁰ While a state may approve of a wind facility, the wind facility may be denied a permit at the local level and vice-versa. Consequently, the permitting process in this model can be very strenuous and time consuming for wind energy developers to get approval at both the state and local levels.

d. Dual authority with state preemption

The fourth type is similar to the third approach because it also generally requires wind energy projects to obtain permits at the state and local levels. The dual authority with state preemption model differentiates itself from the previous model because the

⁹ *Id.*

¹⁰ *Id.*

state may preempt local regulation.¹¹ Therefore, if stringent local ordinances prevent wind energy development, the state agency can preempt the local authority and allow for the construction of a project in the area. It assures that important state interests are not undermined by local decision making.

e. State siting incorporating local requirements

Another model is the state siting incorporating local requirements approach, which combines the third approach into a one-step approval process. Local policy requirements are incorporated into a single permit issued by the state.¹² The state implementing local ordinances encourages local policymakers to adopt unambiguous and relevant ordinances in order for them to be reflected in the certificate or permit provided by the state.

f. State siting

The final approach, state siting, does not enable local governing of wind energy zoning for all wind energy facilities or for those over a certain generating capacity. To eliminate all local power, state boards issue permits to wind developers that preempt all local regulations.¹³ This type of approach is beneficial if local review and approval is creating controversy. It is also advantageous because it advances the state's interest of increasing energy from a renewable source. The major shortcoming of state-only siting is it does not take into account unique local interests and concerns.

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

II. WIND ENERGY ZONING IN THE MIDWEST

The Midwest is a prominent location for wind energy development due to its great potential wind energy capacity. While some states in the Midwest capitalize on the abundance of wind, others are not so prevalent in the wind energy arena. Although many factors play into the amount of energy generated from wind power in the Midwest, it is interesting to speculate the impact that zoning laws in these states have on the number of wind energy facilities in each state. This section will describe the wind energy zoning approaches utilized by Iowa, Minnesota, Wisconsin, and Nebraska.

a. Iowa applies the dual authority with independent decisions approach.

With over 3,200 wind turbines, Iowa ranks as the top state in the United States for the percentage of electricity generated from wind energy. The leading state generates 27.4 percent of its electricity from wind, which is equivalent to providing power for approximately 1,430,000 homes.¹⁴

Wind energy development is governed at the local and state level in Iowa. The state utilities board in Iowa must issue a certificate to a wind energy developer before construction of any electric generation facility with a capacity of over 25 megawatts.¹⁵ The facility also has to comply with local ordinances since the state utilities board shares jurisdiction with local governments.

Iowa county and municipality officials are responsible for creating and implementing ordinances for wind energy zoning. These ordinances vary by county.

¹⁴ "Iowa Wind Energy." American Wind Energy Association, 12 Aug. 2014. Web. <<http://awea.files.cms-plus.com/FileDownloads/pdfs/iowa.pdf>>.

¹⁵ Iowa Code §§ 476A.1; 476A2.

Some counties in Iowa lack wind energy zoning legislation, including a few of the counties where the earliest wind farms in Iowa were built.¹⁶ For instance, Adair County does not have any wind energy development restrictions. Therefore, wind turbines may be built anywhere in Adair County as long as the entity responsible for the turbine has a contract with the landowner and a state certificate if the generating capacity is greater than 25 megawatts.¹⁷ Wind energy development companies prefer counties with lenient standards for wind energy development or no zoning ordinances, such as Adair County, to develop wind energy facilities in, so they do not have to go through more loopholes than necessary.

b. Minnesota utilizes the state siting model that incorporates local requirements.

Although Minnesota is not as prominent in the wind energy arena, it is considered a wind energy leader. Ranking seventh for total megawatts of wind capacity installed, Minnesota's wind facilities generate 3,035 megawatts of energy and contributed to 15.7 percent of the state's total electricity in 2013.¹⁸

For developers to construct wind projects that generate at least five megawatts of energy, also known as large wind energy conversion systems (LWECS), the developer must get permission from the Minnesota Public Utilities Commission (MPUC).¹⁹ Small wind energy conversion systems (SWECS), wind projects with a capacity less than five

¹⁶Jordan, Erin. "Without State Regulation, Iowa Counties Get Tougher on Wind Projects." *The Gazette*, 13 July 2014. Web. <<http://thegazette.com/subject/news/without-state-regulation-iowa-counties-get-tougher-on-wind-projects-20140713>>.

¹⁷*Id.*

¹⁸"Minnesota Is a National Leader in the Wind Energy Industry." American Wind Energy Association, 12 Aug. 2014. Web. <<http://awea.files.cms-plus.com/FileDownloads/pdfs/Minnesota.pdf>>.

¹⁹Minn. Stat. § 216F.04.

megawatts, are subject to local regulations in Minnesota. When considering whether to approve of a LWECs project, MPUC considers several factors of the project, including the environmental impact, cost and decommissioning plan. “The legislature declares it to be the policy of the state to site LWECs in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”²⁰

Although a LWES developer must get permission from MPUC, Minnesota law creates a presumption favoring the application of county ordinances.

A county may adopt by ordinance standards for LWECs that are more stringent than standards in commission rules or in the commission's permit standards. The commission, in considering a permit application for LWECs in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.²¹

However, stricter county ordinances are not always applied. This is demonstrated in *In re AWA Goodhue Wind, LLC*.²² AWA Goodhue Wind, LLC (AWA) was pursuing constructing a LWECs with 50 wind turbines in Goodhue County in 2009. While AWA was waiting for their permit application to be approved by the MPUC, Goodhue County adopted a stringent LWES ordinance, requiring wind turbines to be set back at least the length of 10 rotor diameters, which is equivalent to about a half mile, from each residence in the LWECs project area. The average setback distance for

²⁰ Minn. Stat. § 216F.03.

²¹ Minn. Stat. § 216F.081.

²² *In re AWA Goodhue Wind, LLC*, 2012 Minn. App. Unpub. LEXIS 580, 1 (Minn. Ct. App. June 25, 2012).

wind turbines is usually 6 rotor diameters.²³ This strict ordinance would have prohibited the siting of the majority of the wind turbines in the AWA project. Furthermore, it would have made it nearly impossible for any wind developer to construct a substantial wind project in Goodhue County. An administrative-law judge determined that there was a good cause to disregard Goodhue County's ordinance pursuant to Minn. Stat. § 216F.081.

The Court of Appeals of Minnesota affirmed the administrative-law judge's determination that there was good cause to disregard one of Goodhue County's wind energy ordinances regarding setbacks. When determining there was good cause, the Court applied a multi-factor analysis, which included considering health, safety, environmental impact, and the state's public interest in promoting wind energy development. The Court stated that the Minnesota legislature gave the MPUC the ultimate authority to approve LWECs permits even though it allowed counties to adopt wind energy zoning ordinances. "In doing so, the legislature did not require the MPUC to defer to the county's process of setting standards but instead charged the MPUC with determining whether, as a substantive matter, there is good cause to disregard those standards."²⁴ Although AWA was triumphant in the case, AWA ultimately decided to abandon its proposed wind farm plan in Goodhue County due to disputes regarding its impact on wildlife.²⁵

²³ *Id.*

²⁴ *Id.* 2012 Minn. App. Unpub. LEXIS 580, 8-9.

²⁵ Haugen, Dan. "In Minnesota, Looking for Lessons from Goodhue Wind Fight." Midwest Energy News. 20 Sept. 2013. Web. <<http://www.midwestenergynews.com/2013/09/20/in-minnesota-looking-for-lessons-from-goodhue-wind-fight/>>.

Although wind energy is regulated at both the state and local level in Minnesota, local wind energy ordinances must be reasonable in order to be enforced. A permit approved by MPUC “supersedes and preempts all zoning, building, or land use rules, regulations, or ordinances adopted by regional, county, local, and special purpose governments.”²⁶ Therefore, the state essentially has the ultimate power in wind energy zoning in Minnesota even though it incorporates local regulations.

c. Wisconsin implements state siting along with local siting with defined scope depending on the size of the wind energy facility.

In 2013, Wisconsin only had the wind energy capacity of 648 megawatts compared to Minnesota’s 3,035 megawatts.²⁷ Wisconsin addresses wind energy zoning at the state level with some local input as well depending on the size of the wind energy facility.

Wisconsin’s wind energy zoning regulations are codified in Wis. Admin. Code ch. PSC 128. These rules, which have been in effect since March 16, 2012, give the Public Service Commission of Wisconsin (PSCW) the authority to regulate wind energy projects that have a generating capacity of 100 megawatts or more. Wind farms with a generating capacity of less than 100 megawatts are subject to local zoning ordinances. However, these local rules are restricted. Political subdivisions cannot adopt an ordinance that imposes stricter regulations on wind energy projects than provided in PSC 128. Wisconsin’s wind zoning regulations set out the following guidelines for local

²⁶ Minn. Stat. § 216F.07.

²⁷ "Wisconsin Is a National Leader in Wind-related Manufacturing." American Wind Energy Association, 12 Aug. 2014. Web. <<http://awea.files.cms-plus.com/FileDownloads/pdfs/Wisconsin.pdf>>.

jurisdictions to follow: noise limits of 50 decibel(A) during the day and 45 decibel(A) at night; turbine setback distance of 1.1 times turbine height from property lines, roads, and utility rights-of-way; turbine setback distance of 3.1 times turbine height, up to 1,250 feet, from non-participating residences; shadow flicker is limited to 30 hours per year at non-participating residences and mitigation if over 20 hours; mitigation of radio and television interference; stray voltage testing by the wind energy farm owner by request; and proof of financial responsibility for decommissioning.²⁸

Although these statewide standards for siting wind turbines were aimed at increasing wind energy development in Wisconsin, development has been slow in the state compared to other Midwestern states.

d. Nebraska uses a model similar to the dual authority with independent decisions approach.

Nebraska is one of the top three states that have the most potential wind energy capacity by gigawatt-hours. Nebraska has the potential to generate over 3.5 million gigawatt-hours of wind energy each year.²⁹ Therefore, the state could essentially produce over one hundred times the current electricity needs of Nebraska if it maximized its wind energy potential. Although Nebraska has high wind energy potential, the state has lagged behind neighboring states. In April 2014, installed wind

²⁸ Wind Turbine Siting-Health Review and Wind Siting Policy Update. Rep. Wisconsin Wind Siting Council, Oct. 2014. Web. <<http://psc.wi.gov/renewables/documents/windSitingReport2014.pdf>>.

²⁹ "Nebraska Is a National Leader in Wind Resource Potential." American Wind Energy Association, 12 Aug. 2014. Web. <<http://awea.files.cms-plus.com/FileDownloads/pdfs/Nebraska.pdf>>.

farms in Nebraska had a capacity of 735 megawatts.³⁰ This means the state is only utilizing .08 percent of its wind potential.

Nebraska is the only state in the United States that generates all of its electricity by publicly-owned power systems. Although this unique system of providing electricity to Nebraskans helps keep electricity rates lower than the national energy price³¹, it has hampered the development of wind energy in Nebraska.

Under Neb. Rev. Stat. § 70-1014.01, the Nebraska Power Review Board (“Board”) has to approve electric generation facilities, including wind projects, that have a capacity of greater than 80 megawatts. In order to gain approval from the Board, a developer must guarantee that at least ninety percent of the energy generated from the facility will be purchased by an out-of-state entity for at least 10 years. Consequently, Nebraska’s public power system creates these burdensome regulations that discourage wind energy development in the state, making it less competitive in the wind industry than neighboring states.

Once a wind energy project gets approval from the Board, the developer has to adhere to local zoning regulations if there are any in place. Nebraska legislation authorizes counties and cities to set zoning regulations regarding wind energy facilities.

All counties or municipalities having zoning or subdivision jurisdiction are hereby authorized to include considerations for the encouragement of solar energy and wind energy use and the protection of access to solar

³⁰ *Id.*

³¹ In August 2014, the average retail price of electricity to ultimate consumers in US was 10.92 cents per kilowatthour. Nebraska’s average retail price of electricity to ultimate consumers was 9.62 cents per kilowatthour. U.S. Energy Information Administration.

energy and wind energy in all applicable zoning regulations or ordinances and comprehensive development plans. Such considerations may include, but not be limited to, regulation of height, location, setback, and use of structures, the height and location of vegetation with respect to property boundary lines, the type and location of energy systems or their components, and the use of districts to encourage the use of solar energy systems and wind energy conversion systems and protect access to solar energy and wind energy.³²

As of September 2014, 23 of Nebraska's 93 counties had zoning regulations that identified wind turbine setbacks.³³

III. POLICY RECOMMENDATION

Whether wind energy zoning is controlled by governments at the state, local, or both levels, there are benefits and disadvantages to each approach. This section summarizes some of the consequences, favorable and detrimental, of utilizing the different models. After considering the advantages and concerns of each approach, the section concludes with a recommendation of which form of regulation would likely be most effective for encouraging increased wind energy development.

a. Analysis of wind energy zoning at local level.

Local wind energy regulations reflect local needs and preferences. Proponents of local zoning argue that the one-size-fits-all state approach does not account for geographical differences in a particular state. Local control allows county or municipal officials to create zoning ordinances that fit that locality's needs. "Local tailoring is

³² Neb. Rev. Stat. § 66-913

³³ "Counties with Zoning Regulations in Nebraska." *Wind Energy Development*. University of Nebraska-Lincoln, 22 Sept. 2014. Web. <<http://snr.unl.edu/renewableenergy/wind/windenergydevelopment.asp#zoning>>.

desirable in the land use context because decisions regarding the use of land have a greater impact on those living nearby than on those far away, and because communal decisions regarding land use are essential to creating and expressing community character and preferences.”³⁴

Another consideration that supports local control is many of the benefits and detriments resulting from a wind energy facility are site-specific, meaning they are felt at the local level. These resulting effects include “the land owner receives rental income for allowing the development on her land; the local community collects higher taxes due to the increased property value from the development; the local environment and landscape aesthetics are disrupted; and local geographic features determine the effect turbines will have on migratory wildlife.”³⁵

On the other hand, there are also many externalities at play that local governments must consider when adopting wind energy zoning ordinances. These externalities include reduction of air pollution that would be created by nonrenewable energy sources, wind energy’s impact on migratory wildlife, and the ultimate consumer that benefits from the energy generated by the wind power is often not the residents who live by the wind energy facility. Additionally, market possibilities for electricity generated from wind power may not be completely understood by local authorities.³⁶ It is arguable that state regulations would take these externalities into consideration.

³⁴ Cooperative Federalism and Wind: A New Framework for Achieving Sustainability, 37 Hofstra L. Rev. 1049, 1065.

³⁵ Environmental Perspectives On Siting Wind Farms: Is Greater Federal Control Warranted?, 17 N.Y.U. Envtl. L.J. 1243, 1269-1270.

³⁶ *Id.* at 1274.

Although there are many benefits to local control of wind energy zoning, there are also drastic drawbacks, especially for wind energy developers. Wind energy zoning governed by local authorities creates varying requirements within a state. This results in unpredictability and inconsistency for wind developers. It is especially burdensome for wind energy developers to abide by all the zoning regulations with the proximity of their proposed facility if it spreads over more than one county. The counties involved will probably have different ordinances regarding siting of wind turbines.

Furthermore, intense local opposition to wind energy facilities is reflected in ordinances adopted by local leaders. The “not in my backyard” (“NIMBY”) theory is at the heart of this opposition. Residents do not want to have to deal with the effects of having a wind turbine in their “backyard”. Local opposition is a major hindrance for wind energy companies. Wind energy developers must overcome community opposition if they want to construct a wind facility in that specific area.

Overall, there are numerous benefits as well as consequences to regulating wind energy zoning at the local level. The above analysis indicates that there is a convincing rationale for local interests to be taken into account for wind energy zoning. However, the danger of local input being based off of close-minded preferences toward wind energy development should not be disregarded.

b. Analysis of state governance of wind energy siting.

As discussed above, wind energy zoning at the local level can create uncertainty for wind developers. State legislation alleviates the piecemeal of local siting regulations by providing developers with a predictable, uniform and consistent process. This

approach is especially beneficial to wind energy companies if a wind project will consist of turbines located in more than one county. It allows developers to get a wind facility siting permit approved by one entity rather than by multiple counties or at both the state and county level.

While externalities are at play when there is local regulation, internalities are created when wind energy zoning is controlled at a higher level. These internalities include “all of the effects on the local environment, local aesthetics, and the economic benefits of development.”³⁷ State policymakers do not address these internalities. However, there is justification to restrict local control of wind energy zoning if the damage to social welfare from local authorities ignoring externalities outweighs that from the state government ignoring internalities. *Id.*

State regulation also serves the best interests of the state. Increased dependence on renewable energy is a goal of many states. State control of wind energy zoning assures that legislative intent of increasing wind power in a state will more likely be fulfilled. In addition, state zoning removes the wind energy zoning process away from local emotions and communities that are set against wind energy development. A state approach provides an “atmosphere of fairness often absent at the local level.”³⁸

Although removing the siting process from being subject to the opposing local environment may be considered a benefit in some respects, it is also a major concern. Standardized wind energy regulations at the state level often do not take into account

³⁷ *Id.*

³⁸ Kahn, Robert. Siting Struggles: The Unique Challenge of Permitting Renewable Energy Power Plants, *Electricity J.*, Mar. 2000, at 24.

the changes in local geography and culture. The landscape of a state can vary drastically from one county to the next. Therefore, state regulations may be adequate for one region of the state but not for another.

Another flaw in state regulation is lawmaking is time consuming. The legislative process is complex, and it could take a long period of time for a wind energy zoning bill to pass as a law. Furthermore, political agendas could hinder the timely passing of wind zoning legislation. However, this argument applies at the local level as well although the passing of a local ordinance is not as complex.

After considering both the pros and cons of regulating wind energy zoning at the state level, it is evident that neither the benefits nor disadvantages of this type of approach clearly outweigh the other. Although the argument that uniform wind energy guidelines throughout a state provides a degree of certainty and a level playing field without opposition coming from locals is convincing, local concerns and input cannot be totally abandoned in the siting process of wind energy farms.

c. Analysis of wind energy zoning regulated by both state and local authorities.

The pros and cons of regulating at both levels of government vary depending on the degree of local involvement. Dual approaches that lean more toward local authority share many of the same benefits and concerns of local based regulations discussed previously. Models focused more on state control have similar consequences to those described in the strictly state regulation section.

An advantage to this type of approach is it considers both state and local interests. However, one level usually dominates over the other. It is difficult to find the right equilibrium between state and local control.

A frustration of zoning wind energy facilities at both levels is it is time consuming along with cumbersome for prospective developers to get issued a permit by both authorities. A wind farm plan may be approved by one government but later rejected at the other level. Therefore, it would be more convenient for developers to only have to go through one permitting process.

Allowing community members to have input on a select number of issues in the wind energy zoning process is a major benefit of this approach.

d. Policy recommendation on which type of approach to implement

Since there are valid arguments for and against each method of wind energy facility siting, it is most desirable for states to implement an approach that gives authority to both state and local governments. The key to an effective approach that promotes wind energy development is to find the correct balance between state and local power. However, one must keep in mind that there are other factors that affect wind energy development that are not addressed by zoning regulations, such as financing wind projects and infrastructure for the transmission of electricity generated by wind power.

i. Permitting process

It is essential for a state to establish a consistent and timely permitting process that has no more than two levels of review. Multi-level review of a wind energy facility

permit is complicated and has the potential to lead to disputes. A board, commission or agency delegated by the state government should take the lead in the process of reviewing permits. The delegated state entity would be in charge of a single-stop consultation process involving the developer, regulators, and impacted governmental bodies.

The first step in the process requires that a developer submits an application for a permit, including its proposed development plan, to the delegated state authority. Next the delegated state entity reviews the plan and determines if it meets clearly defined state wind energy zoning standards. Therefore, state legislators must adopt clear guidelines that address a select number of issues, such as setbacks, noise, aesthetics, wildlife, safety considerations, health concerns, decommissioning, shadow flicker, ice throw and other nuisances. Consistent guidelines for wind energy facility zoning are beneficial for developers.

If the proposed plan meets state requirements, impacted local governments will be notified about the proposed wind power development within a specified time. In order to take into account local interests along with the vast geographic and demographic variations among communities, local authorities will be given the authority to file a complaint that explicitly states their concerns and suggestions regarding the proposed wind energy project. Their concerns must be supported by substantial evidence. Furthermore, the local board's complaints will be limited to a set number of issues that will be predefined by the state. This must be done within a specified deadline.

To address the local complaint, the state organization will hold an organized discussion where all involved parties will have the opportunity to voice their opinions. After the discussion, the members of the leading state entity will objectively vote for or against the approval of the proposed wind farm while taking into consideration the concerns in the complaint and viewpoints voiced at the discussion. If a majority of the members vote in favor of approval, the developer will be issued a permit and can start construction of the turbines. If the wind energy project is denied a permit, the developer can revise its plan and submit it to the agency again for review.

Additionally, a timeline for the permitting process would be helpful. The timeline should set a maximum number of days for each step of the reviewing process. Furthermore, this permitting process would apply to wind energy facilities that had a generating capacity over a certain amount of megawatts determined by state statute. Any wind power projects that generated less than the specified amount would be subject to local control. Therefore, local governments would be responsible for regulating wind energy zoning at a smaller scale.

This proposed permitting process gives primary control to state authorities, but local input is still valued. Although this model will limit local control, the regulation of wind energy zoning at a more centralized level is more desirable to achieve the goal of increased wind energy development.

ii. Other suggestions

To direct wind energy developers to areas in a state that are wind turbine friendly, a state organization could develop a map that indicates preferred wind energy

development regions based on wind resources and local zoning ordinances. Nebraska's livestock friendly county designation, which recognizes counties that actively support the livestock industry, could be used as a guide except the counties would be recognized for actively supporting wind energy development.³⁹

States can also incorporate in their statutes a provision that encourages local regulations to accommodate and promote wind energy development. In order to combat impeding local ordinances, state legislatures could assert more authority over smaller governments by adopting legislation that prohibits unreasonable local regulations. This is less restrictive on local control than state governments setting specific standards that wind energy developers must abide by and not giving local authorities any power to set definite standards. On the other hand, it would be acceptable for a state wind energy policy to prohibit local governments from completely banning wind energy developments. Reducing conflict between the wind energy facility developer and local residents impacted by the wind turbines is another relevant policy objective.

Another option is having states pass legislation that directly regulates facets of wind energy zoning that pose the greatest concerns at the state level while at the same time not overstepping local boundaries. This option would not force a definite set of wind siting standards upon local authorities while achieving state interests of increasing wind energy. In general, the main goal of enacted legislation should be to

³⁹ "Livestock Friendly County Program." Nebraska Department of Agriculture, n.d. Web. <http://www.nda.nebraska.gov/livestock_friendly/>.

remove political and regulatory obstacles for wind industry developers while taking into account not only the opposing interests of residents impacted by a proposed wind farm but also the overall public interest of substantially increasing renewable energy output and use.

Conclusion

Wind energy zoning remains generally uncoordinated and subject to state and/or local regulations, resulting in a piecemeal approach where zoning standards vary between states and within states. In order for wind energy development to continue increasing, there must be an effective approach to wind energy zoning implemented that reduces inconsistency and unpredictability caused by the patchwork approach that is currently in place. The key is finding the right balance between local and state control.