

# Small Wind Innovation Zone Johnson County, Iowa

Iowa State Association of Counties  
2012 Excellence in Action Awards Application  
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## 1. Abstract of the Program

The Iowa Utilities Board (IUB) recognized the unincorporated area of Johnson County as a Small Wind Innovation Zone. Johnson County was one of the first two counties in Iowa to receive this designation in March 2012. The IUB established the Small Wind Innovation Zone program in 2009 to encourage development of private and distributed wind generation systems statewide.

To qualify for the designation, the Johnson County Board of Supervisors approved amendments to its Unified Development Ordinance, permitting private wind generators within all zoning districts as accessory uses and distributed wind generators as conditionally permitted uses. Staff and political leadership in Johnson County recognized the importance of changing policies and ordinances to promote and increase the use of Iowa's abundant wind.

Benefits to residents in the Small Wind Innovation Zones include: first consideration for available renewable energy tax credits for new turbine owners, and an expedited application process for interconnecting small wind energy systems with the local electric utility's grid.

Wind turbines can meet a significant portion of residential energy needs. A typical private wind generator can produce about 230 kWh per month; enough to meet one-quarter of an average-sized home's monthly energy needs. A typical distributed wind generator can produce 250,000 kWh annually, which can fully power 25 average-sized homes for one year.

## **2. The Problem/Need for the Program**

Before Johnson County took steps to become a Small Wind Innovation Zone, residents in the unincorporated areas faced barriers in installing private or distributed wind generators. Yet, like many Iowa counties, Johnson County has significant wind potential that can be harnessed for clean and renewable electrical energy.

Prior to earning the IUB designation, the County required a conditional use permit for citizens seeking to establish a private wind generator. In addition, requirements for commercial, or distributed, wind generators were not clearly specified. Citizens also faced complicated, time-consuming processes to connect their wind generators to local utility electrical grids. Development agreements between Johnson County and its municipalities further complicated matters. Many of these development agreements, also known as *fringe area agreements*, enabled city residents on the *fringe* of their city to effectively stop, or strongly discourage, neighboring county property owners from erecting wind generators on their property. The Not-in-My-Backyard attitude from city residents, as well as regulatory and process barriers, prevented rural property owners from pursuing private and distributed wind generation projects. Without the Small Wind Innovation Zone designation, rural Johnson County residents were simply not competitive in seeking and receiving the finite amount of renewable energy tax credits approved by the state legislature over the past several years.

Citizens in Johnson County's unincorporated area were losing out on greener energy development and its related economic benefits. Green energy development is key to ensuring a sustainable future for Johnson County, as well as Iowa as a whole. The economic downturn that began in 2007 made it even more important to find ways for homeowners and residents to save money and stimulate the economy. Making the County more wind-friendly also generally supports the efforts of Iowa City, the largest city in Johnson County, which in the past year has created a 107-acre site designated and certified for a Wind Energy Supply Chain Campus.

Johnson County recognized that its residents would benefit greatly if the county became a Small Wind Innovation Zone, as designated by the IUB. The designation would allow the residents in the unincorporated area to:

- take advantage of renewable energy potential and Renewable Energy Tax Credits, and
- allow Johnson County to be a leader for other counties and municipalities in Iowa and the nation.

## **3. Description of the Program**

In keeping with aims of the Johnson County Strategic Plan, which includes a focus on sustainability and providing quality and process-efficient services and products, the County's Board of Supervisors directed staff to make small wind opportunities more accessible to citizens in unincorporated areas of the

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County. The population in these areas numbers 21,178, representing 16 percent of the entire population of the county (U.S. Census 2010). Households include private landowners on small acreages as well as residents residing in higher density subdivisions; commercial operations range from small Amish family businesses to traditional commercial operations, community supported agriculture, wineries, event venues, light manufacturing, and heavier industrial uses. Although farms of 40 acres or more are exempt from zoning regulations, farmers can take advantage of the opportunities afforded by the wind zone designation.

With the amended ordinances and wind zone designation in place, both private and distributed wind generator projects are easier to launch. To erect a private wind generator on their property, rural residents need only apply for a building permit and comply with a few necessary but clearly communicated regulations meant to ensure the safety and welfare of surrounding county residents. A building permit requires only staff review. The regulations pertaining to private wind generators are established by ordinance, not by the Board of Adjustment, and are no longer open to interpretation by any appointed citizen board.

Individuals applying for distributed wind energy projects for commercial uses or larger residential developments also now benefit from clearer requirements and a more streamlined Board of Adjustment review process. Under the ordinance amendments, the Board of Adjustment is compelled to approve all distributed wind generators that are in compliance with the listed supplemental conditions.

Johnson County also wanted to serve as a model in small wind generation to other counties in Iowa. The IUB Small Wind Innovation Zone designation had been in place since 2009, but no county in the state had yet taken advantage of the opportunity. Johnson County's efforts to earn the designation included internal partnerships between its Planning and Zoning Department and Board of Supervisors, and external partnerships with the Iowa Renewable Energy Association (I-RENEW) and the Floyd County Board of Supervisors and Planning and Zoning staff.

In 2011, I-RENEW contacted Johnson County Planning and Zoning leadership to foster ways to create wind and renewable-energy friendly ordinances. Following discussion with I-RENEW representatives, the Johnson County Planning and Zoning staff began to revise the commercial and residential wind generator ordinances in order to meet the IUB model ordinance requirements.

The County's Planning and Zoning staff, I-RENEW, and the Board of Supervisors worked together to ensure the ordinance amendments complied with the County's Land Use Plan and ensured the health, safety, and welfare of the public, while making small wind energy generation more accessible to rural residents. Additionally, Johnson County Planning and Zoning staff and board members worked with their counterparts in Floyd County, with the overall goal of submitting applications together to the IUB in order to be recognized as Small Wind Innovation Zones and demonstrate that small and large Iowa counties can work together. Each county had to complete several tasks to meet the IUB requirements:

- Research the needed changes to existing ordinances to meet IUB requirements, while still complying with other existing County policies and plans. The ordinances had to address Tower Height and Setback, Building Division Approval, Safety, Sound, Abandonment, Signage, and Lighting. The County then had to show proof of the ordinance's approval. On February 16, 2012, the Johnson County Board of Supervisors voted to amend the Johnson County Unified Development Ordinance to make private wind generation an accessory use and clarified the requirements for distributed wind generators.
- Identify the electric utilities that provide service within the County and collect documentation from each of these utilities to show how each utility company serves the County and is either subject to certain state provisions related to small wind energy systems or willing to use them.

The Planning and Zoning staff then submitted the required paperwork to the IUB board. Staff responded to IUB follow-up inquiries, focusing on why the Johnson County ordinance differs in three primary ways from the IUB model ordinance. The IUB accepted the validity of these differences, which include:

- The IUB model ordinance has no height limitations for wind turbine hubs. Johnson County includes height limitations to support its existing Land Use Plan scenic view policies.
- The IUB model ordinance requires allowing for pre-approved manufacturer standardized plans for smaller installations. Johnson County code neither provides for nor excludes these types of standardized engineered plans. The IUB found it acceptable that the County ordinance does not prevent a manufacturer from submitting a standard plan for approval by the building official, so long as a registered engineer can prove the manufacturer is submitting a plan approved for the local soil conditions.
- Since there is no local ordinance in Johnson County regulating and defining nuisances, the IUB found it acceptable that the County omit a nuisance provision in its wind generation ordinance.

The IUB then determined that Johnson County complied with all requirements and approved Johnson County's application for designation of its unincorporated areas as a Small Wind Innovation Zone.

#### **4. Use of Technology**

- Internet: The County used an online application system to apply to the IUB for the wind zone designation.
- Intranet/Website: The County has publicized its Small Wind Innovation Zone designation on its website and distributed a news release that also was posted online. The information helps educate citizens in unincorporated areas about the option to install wind turbines and informs

other counties and municipalities about the designation. The relevant [amended ordinance](#) also is posted online.

- GIS/LiDAR: In the future, the County intends to map wind patterns using Light Detection and Ranging (LiDAR) and link this information to current GIS-based property viewer data. This enhanced mapping, showing such characteristics as wind speed and direction, will enable County residents to better understand the wind potential on their property.

## **5. Cost of the Program**

The cost for the application to the IUB to be recognized as a Small Wind Innovation Zone was free, and the application process was straightforward, but time consuming. Due to the relative size and growth patterns of Johnson County and the complexity of its Unified Development Ordinance, Johnson County had to commit significant staff time to becoming recognized as a Small Wind Innovation Zone. Staff time dedicated to researching and writing the ordinance amendments was significant, as was the amount of staff time needed to research, contact, and work with all local utilities. It can be inferred that smaller and less regulated counties will have to dedicate less staff time to the process.

## **6. Results/Success of the Program**

The ordinance update and the recognition of Johnson County as a Small Wind Innovation Zone have been in effect for less than 6 months. According to Mike Carberry, who sits on the Board of Directors of the Iowa Wind Energy Association, “Johnson County is showing leadership in reducing the bureaucracy, cumbersome regulations, and other barriers associated with private land owners who want to utilize Iowa’s abundant wind energy.”

Nancy Quellhorst, President and CEO of the Iowa City Area Chamber of Commerce, has stated, “Johnson County’s recognition as a Small Wind Innovation Zone reinforces Iowa’s status as a national leader in total wind energy generation and supports our local efforts to develop the industry. The Iowa City/Cedar Rapids Creative Corridor will also enjoy the associated environmental and economic benefits of that leadership. We’re excited about the opportunities the designation creates for our community.”

To date, staff has received several inquiries from both the general public and businesses regarding the Small Wind Zone Designation. Only one wind generator has been erected since the recognition, but it is expected that more are soon to come. For example, staff is currently in concept discussions with a local developer who wants to create one of the nation’s first truly “green” residential developments that will be heavily reliant upon wind energy. Johnson County itself is taking advantage of the interconnection agreements made possible by being a Small Wind Innovation Zone and is planning to install a wind generator at a soon-to-be constructed secondary road facility.

Through the adoption of the amended portions of the Unified Development Ordinance, the Johnson County Board of Supervisors has ensured that Johnson County will be prepared for a future where wind energy is more the rule than the exception. Johnson County is demonstrating its support for reducing greenhouse gas emissions and creating a healthier environment for citizens while supporting an industry capable of generating long-term, well-paying, and skilled jobs for the state.

#### **7. Worthiness of the Award**

Prior to Johnson and Floyd Counties applying for and earning the Small Wind Innovation Zone designation, no other counties in the state had earned the innovative designation, which had been available since 2009. Johnson and Floyd counties responded to the state-level opportunity and expanded it by working together in an unusual, small–large county collaboration.

As noted earlier, citizens in unincorporated areas faced unclear and cumbersome processes and regulations, as well as barriers, to their efforts to harness wind energy. The designation has effectively removed these hindrances and is beginning to bring direct benefits and opportunities to county residents. It has also helped show other counties the benefits of the wind zone designation. All of the ordinance amendments and other background work, as well as the current wind program itself, was completed in a matter consistent with quality planning practice and supports the three-prong economic, social, and environmental approach of sustainability.