

## Growing Community Capacity in Energy Development Through Extension Education

### Abstract

New energy policy, industry regulation, and market investment are influencing the development of renewable energy technologies, setting the stage for rural America to provide the energy of tomorrow. This article describes how Extension's renewable energy programming was implemented in two Ohio communities to engage elected officials and residents in learning applied aspects of renewable energy development. Through outreach and education, Extension can assist communities in making informed decisions about renewable energy projects. Reflecting on the impacts from renewable energy programming delivered in Ohio, the authors recommend that Extension systems across the country engage communities in renewable energy education.

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### Introduction

According to the U.S. Energy Information Administration's 2011 Annual Energy Outlook Report, it is estimated that 33% of the overall growth in electricity generation from 2010 to 2035 will come from non-hydroelectric renewable energy resources (EIA, 2011). Controversial social, economic, and environmental issues associated with energy have fostered ongoing debates about: carbon dioxide emissions; climate change; growing population; energy independence; and revitalizing U.S. manufacturing. These critical discussions are shaping new energy policy, industry regulation, and market investment, which are setting the stage for rural America to provide the energy of tomorrow. According to a 2006 *Journal of Extension* article, the new energy economy is going to be rural and the potential for it is unlimited. Extension agents have a growing responsibility to provide research-based data to our customers about these emerging opportunities (Fortson, 2006).

### Renewable Energy in Ohio

Most states have established a Renewable Portfolio Standard (RPS) or goal requiring electric supply companies to generate a specified amount of electricity from renewable energy sources. In 2008, Ohio passed Senate Bill 221, which included the state's Alternative Energy Portfolio Standards. This new law requires that 25% of electricity sold by investor owned utilities must be obtained from alternative energy resources by the year 2025. With the passage of this new law, the stage was set

for Ohio's first generation-scale renewable energy projects.

## Wyandot Solar

The PSEG Wyandot Solar Farm is an 85-acre 12-Megawatt solar facility that is currently the largest solar field in Ohio. Generating carbon- and pollution-free energy, the 159,200 solar panels provide enough electricity to serve more than 9,000 homes when the sun is shining. The project represents an investment of roughly \$35 million dollars, fostering community benefits including job creation, revenue generation, installation of solar panels on high schools, and positive marketing.

## Blue Creek Wind Farm

At 305 Megawatts and with 152 wind turbines, the Iberdrola Blue Creek Wind Farm located in Van Wert Ohio is considered "large." The project represents an investment of over \$600 million, fostering community benefits including job creation, lease payments totaling over 1.1 million, 2.4 million in local tax revenue, and an enormous spinoff of economic activity in the region.

### Extension's Role in Renewable Energy Development

Across the country, there is promising evidence of new investment, new companies, and new jobs being created through higher education's efforts (Shaffer & Wright, 2010). In this example, OSU Extension played a significant role in facilitating the development of two of Ohio's first generation-scale renewable energy projects. In both examples, Extension educators provided leadership to the local Economic Development Office through development and delivery of community economic development programming.

After learning of the proposed projects, local leaders had a number of questions on wind, solar, energy policy, economic influence, and related community impacts. To answer these questions, local leaders turned to OSU Extension. Reacting swiftly, the educators started by researching literature to better assist community leadership in making informed decisions regarding the energy projects (Table 1). The economic developer's challenge is to recognize the economic changes being driven by clean energy and to help his or her community visualize future implications and opportunities (Hyatt Bosman, 2012).

Extension educators played a multi-faceted role, facilitating or attending meetings on the projects with decision makers and in open public forums to share what they learned and to gather input. The meetings provided the educators an opportunity to distribute information and deliver presentations that assisted in the decision-making process. To make effective economic decisions, communities must understand how changes in the global, national, and regional economies affect the opportunities they have (Weber, 1987). Community leadership and citizenry relied on Extension educators, to provide non-biased information.

**Table 1.**  
Role of Extension in Renewable Energy Development

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<b>Role</b>	<b>Description</b>	<b>Intended Outcome</b>
Research and gather information	Identify, read, and compare multiple resources, from a variety of perspectives to gain knowledge on the renewable technology.	Gain knowledge to be prepared as the community's non-biased "expert" on the topic/project.
Produce Educational Materials	Leverage existing University research and resources to produce educational materials such as fact sheets and bulletins.	Extend resources of the University to educate local extension clientele.
Outreach and education	Schedule and facilitate or attend meetings and forums related to the project to distribute and/or present information.	Prepare community in making an informed decision concerning the project.
Link community and company	Act as liaison between the company and community to provide transparencies, share information and build a trusting relationship.	Build communication trust between the company and community
Publicity and promotion	Identify media outlets, prepare press packets, releases and conduct interviews to share information with the general public.	Promote economic development, Extension's role in ED, and celebrate successes

### **Value of Extension's Involvement**

Extension played an important role in setting the stage for building trust by facilitating education and encouraging public interaction. According to Van Wert County Commissioner Clair Dudgeon, "The research, expertise, and resources available through OSU Extension have been very advantageous to us, especially in a sector so new as wind energy" (personal communication). Serving as a third party resource for research-based information, Extension's education efforts benefit renewable energy projects by increasing the communities' collective understanding of energy development and the related social, economic, and environmental impacts.

### **What Did We Learn?**

Based on existing energy policy influences, the integration of renewable technologies into rural America seems inevitable. As of June 2012, RPS requirements or goals have been established in 37 states, driving the implementation of renewable energy technologies such as wind, concentrated solar, Photovoltaic solar, biomass, hydroelectric, geothermal, landfill gas, and tidal. Renewable energy development is ramping up in rural communities across the country, promising to play a role in meeting our future energy needs. Local officials and community residents have many questions on renewable energy and how the proposed development will affect their community. Extension can use

its understanding of broad socioeconomic trends and its experience with other communities to help community decision makers ask the right questions (Weber, 1987).

## Recommendations

Extension educators should engage communities in renewable energy education to build the capacity of local officials, preparing them to successfully assess the impacts of renewable energy projects. Fortson predicted this critical contribution in her 2006 article, "Extension agents [Educators] across the country are in the best possible position to both introduce this new [renewable energy] industry to America's farmers and ranchers and support them through the tides of change. In doing so, we'll help create a crop of entirely new possibilities" (Fortson, 2006). Our experiences in Ohio indicate that Extension is in a strategic position to fill a critical role in delivering educational programming on renewable energy. To effectively address this emerging need Extension must:

- Recognize energy and the environment as a critical issue.
- Maintain credibility by developing programs that are non-biased and research-based.
- Address social, economic, and environmental impacts.
- Promote outreach and education to foster informed decision-making.

Reflecting on the impacts from renewable energy programming delivered in Ohio, the authors recommend that Extension systems across the country engage communities in renewable energy education.

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