Technical Progress Report

Project Title: Wind Energy Education and Outreach Project

Covering Period: April 15, 2006 through December 31, 2010

Date of Report: January 9, 2013

Recipient: Illinois State University

Award Number: DE-FG06GO86091

Working Partners: David Loomis, Principal Investigator
David Kennell, Co-principal Investigator
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Cost-Sharing Partners: None

Contacts:

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Project Objective: This project's objective was to further the education and outreach of Illinois State University concerning wind energy. The project also developed the Center for Renewable Energy, sustaining the Illinois Wind Working Group and the undergraduate program.

Background: The purpose of Illinois State University's wind project was to further the education and outreach of the university concerning wind energy. This project had three major components: to initiate and coordinate a Wind Working Group for the State of Illinois, to launch a Renewable Energy undergraduate program, and to develop the Center for Renewable Energy that will sustain the Illinois Wind Working Group and the undergraduate program.

Status: Overall, this project had three major goals: to create, develop and lead the Illinois Wind Working Group; to develop an undergraduate degree in renewable energy; and to create, develop and lead a Center for Renewable Energy at Illinois State University.

Illinois Wind Working Group

The Illinois Wind Working Group (IWWG) was founded in 2006 with 15 members. It has grown to over 180 members today representing all aspects of the wind industry across the State of Illinois. In 2008, the IWWG developed a strategic plan to give direction to the group and its activities. The strategic plan identifies ways to address critical market

barriers to the further penetration of wind. The key to addressing these market barriers is public education and outreach. Since Illinois has restructured the electricity market, utilities no longer have strong control over the addition of new capacity within the state. Instead, market acceptance depends on willing landowners to lease land and willing county officials to site wind farms. Many times these groups are uninformed about the benefits of wind energy and unfamiliar with the process. Therefore, many of the project objectives focus on conferences, forums, databases and research that will allow these stakeholders to make well-educated decisions. Illinois State University received a competitive grant from the Department of Energy in 2009 to further extend the work of the Illinois Wind Working Group.

The Illinois Wind Working Group held the following events between 2006 and 2012:

IIWGW Advancing Wind Power in Illinois Annual Conference:

2007 – Bloomington, IL – 275 attendees
2008 – Bloomington, IL – 300 attendees
2009 – Bloomington, IL – 440 attendees
2010 – Peoria, IL – 281 attendees
2011 – Chicago, IL – 272 attendees
2012 – Normal, IL – 183 attendees

IIWGW Siting, Zoning, and Taxing Wind Farms in Illinois:

2007 – Peoria, IL – 200 attendees
2009 – Peoria, IL – 297 attendees
2010 – Peoria, IL – 243 attendees
2011 – Normal, IL – 286 attendees
2012 – Normal, IL – 224 attendees

Building the Wind Turbine Supply Chain Workshops:

2009 – July – Bloomington, IL – 206 attendees
2009 – October - Macomb, IL – 130 attendees
2010 – July – Peoria, IL – 87 attendees

Landowner Forums – Wind Energy 101:

2008 – Warren County – 56 attendees
2009 – Mason County – 100 attendees
2009 – Livingston County – 65 attendees
2009 – Champaign County – 98 attendees
2009 – Ford and Iroquois Counties – 15 attendees
2009 – Warren County – 56 attendees
2009 – Morgan and Scott Counties – 27 attendees
2009 – Statewide Telenet – 43 attendees
2009 – Ford and Iroquois Counties – 13 attendees
2009 – DuPage County – 44 attendees
2009 – Cook County – 40 attendees
2009 – LaSalle County – 29 attendees

2009 – Livingston County (2nd time) – 27 attendees
2010 – Stephenson County – 22 attendees
Wind Energy 101 presentations then added to website

IWWG Full Group Conference Calls with Speakers:

2009 – 3 conference calls
2010 – 7 conference calls
2011 – 1 conference call

IWWG Executive Committee Meetings:

2006 – 1 in-person meeting
2007 – 1 in-person meeting
2008 – 2 conference calls, 1 in-person meeting
2009 – 4 conference calls, 1 in-person meeting
2010 – 7 conference calls, 1 in-person meeting
2011 – 8 conference calls, 1 in-person meeting

Center for Renewable Energy

The Center for Renewable Energy was founded and approved by the Illinois Board of Higher Education in August, 2008, as a Center recognized by the State of Illinois after approval from the University administration and Board of Trustees. The Center recruited industry partners and has four founding members: EDP Renewables, Suzlon Wind Energy Corp., Iberdrola Renewables and State Farm Insurance. These firms provide financial support and internship opportunities for students in the renewable energy major. The Center also received a grant from the Illinois Clean Energy Community Foundation to create a state-of-the-art renewable energy laboratory.

The Center has three major functional areas: supporting the renewable energy major at Illinois State; serving the Illinois renewable energy community by providing information to the public; and encouraging applied research on renewable energy at Illinois State and through collaborations with other universities.

Support of the Renewable Energy Major

Many new workers will be needed in the renewable energy industry. To meet the growing demand for trained and educated workers, an interdisciplinary renewable energy major was developed at Illinois State. Graduates of the program are well-positioned to compete for new and existing jobs. The Center supports the renewable energy major through creation of an advisory board of outside experts, a renewable energy internship program, bringing renewable energy experts to campus for seminars for faculty and students, funding scholarships to ensure high quality students in the major, and providing ongoing financial support for the major.

Public Outreach

The Center serves the broader renewable energy community by providing information through conferences and materials. The Center hosts the IWWG, in collaboration with the U.S. Department of Energy's Wind Powering America Program. The IWWG sponsors annual conferences to promote the use of wind energy through education and information. The IWWG also provides information/materials to individuals and the media regarding the use of wind energy.

Applied Research

Finally, the Center encourages applied research on renewable energy. The Center promotes research by highlighting grant opportunities concerning renewable energy, coordinates meetings where cross-disciplinary faculty can showcase their research and identify areas of collaboration, and provides "seed money" grants to Illinois State faculty interested in renewable energy research. The Center also participates with other Illinois universities to identify areas of collaboration across universities.

Reports, Working Papers, and Publications include:

- Economic Impact of Wind Energy Development in Illinois 2009
- Public Beliefs and Opinions of Wind Energy in Illinois 2010
- Illinois Wind Turbine Supply Chain Report 2010
- Wind Farm Proximity and Property Values: a Pooled Hedonic Regression Analysis of Property Values in Central Illinois 2010
- Economic Impact of Wind Energy Development in Illinois 2010
- The Illinois RPS: Context, Structure and History of the Policy, 2011
- The Effect of Wind Farms on Residential Property Values in Lee County, IL 2011
- Wind Farm Implications for School District Revenue, July 2011
- Economic Impact of Wind Energy Development in Illinois 2011
- Wind Development Provides the Most Jobs of the Various Generation Sources in Illinois 2011
- Illinois Could Become Fourth Largest State for Wind in 2011
- Illinois: Windy City: Prairie Power – Wind Farms and Growth 2012
- Economic Impact of Wind Energy Development in Illinois 2012

Personnel

The Center for Renewable Energy has a Center Director, three Center Associate Directors, a Senior Energy Analyst, a Coordinator, and an Office Manager. The Director and Associate Directors are faculty members at Illinois State.

David Loomis is the Director of the Center and Director of the Illinois Wind Working Group. Dr. Loomis has designed and implemented over 25 Illinois-based policy conferences and several international conferences. He received the 2008 Outstanding State Wind Working Group Award from the Department of Energy's Wind Powering

America at WindPower 2008. He has published 10 articles, 4 book chapters and co-edited two books. He was responsible for designing and planning the Siting, Zoning, Taxation conferences, Landowner Forums, and Annual Conferences. Dr. Loomis oversaw the maintenance of databases, the pursuit of speakers for the conference calls, and finally, directed the property value study.

Dr. J. Randy Winter, David Kennell, and Dr. Jin Jo are Associate Directors of the Center for Renewable Energy at Illinois State. Each assisted with implementing the conferences and directed the research into public perceptions of wind energy.

Matt Aldeman is the Senior Energy Analyst for the Center. He provided technical assistance and public outreach to the external community, assisted faculty in applied research, and operated the Center's SODAR unit, meteorological tower, and off-grid hybrid wind/solar system.

Janet Niezgoda is the Coordinator of the Center. Her primary responsibilities included implementing the conferences, handling publicity, corresponding with speakers, coordinating registration, and preparing conference attendee packets. Ms. Niezgoda also maintained the website to keep all the information provided current.

Renewable Energy Major

The Bachelor of Science in Renewable Energy was created with substantial input from the renewable energy industry. It was the first interdisciplinary renewable energy major in the country and several other universities have modeled their program after the one at Illinois State. The program has two tracks: a technical track and an economics/public policy track. It has an emphasis in wind, solar and biofuels. The program received its final approval from the Illinois State Board of Education in October 2007. It was anticipated 45-60 students would enroll in the major in the long run but almost immediately 80 students enrolled with 20 more on a waiting list. Nine students had summer internships in 2010 and twelve students graduated in May, 2010.

Illinois State University was included in the 2012 Princeton Review - Guide to Green Colleges, a listing of schools that "demonstrate a strong commitment to sustainability in their academic offerings, campus infrastructure, activities, and career preparation." Two of the significant elements that contributed to the ISU listing in the 2011 Guide to Green Colleges were the establishment in 2008 of the Renewable Energy major and the Center for Renewable Energy. The interdisciplinary program was the first of its kind in the United States to prepare students for green careers through a broad exposure to essential technology and economics/public policy principles and issues. The Center for Renewable Energy works in conjunction with faculty in the major to develop opportunities for applied research on renewable energy projects that often provide real world learning experiences for students.