



RENEWABLE ENERGY RESOURCES PROGRAM REPORT

January through December 2011

**Illinois Department of Commerce and Economic Opportunity
Illinois Energy Office
Renewable Energy Resources Program
500 East Monroe
Springfield, Illinois 62701**



Executive Summary

Since its inception, the Renewable Energy Resources Program (RERP) has successfully facilitated over \$329 million of total investment in renewable energy projects in Illinois through \$45 million in RERP grant and rebate expenditures (see figure below). The Department of Commerce and Economic Opportunity (the Department) finds that the facilitation of renewable energy projects in Illinois brings economic development benefits to the state including new income streams, new jobs, new investments and new property tax sources.

Fiscal Year	Incentives Awarded (\$)	Total Project Cost (\$)	Number of Grants Issued	Number of Rebates Issued
1999	\$40,265	\$90,381	2	3
2000	\$2,520,831	\$10,276,563	14	20
2001	\$2,462,423	\$5,666,165	23	35
2002	\$8,109,613	\$66,009,091	25	37
2003	\$6,394,456	\$69,126,237	32	52
2004	\$5,175,936	\$104,660,966	16	65
2005	\$1,366,560	\$3,063,006	5	68
2006	\$568,870	\$1,617,687	0	110
2007	\$3,500,021	\$11,045,159	35	165
2008	\$2,307,895	\$3,719,918	2	164
2009	\$4,876,068	\$35,035,919	24	184
2010	\$6,121,781	\$13,028,846	3	222
2011	\$2,220,457	\$5,469,831	3	109
2012*	\$153,164	\$549,835	0	18
TOTAL	\$45,818,339	\$329,359,604	184	1,252

* FY 2012 projects funded by 12/31/11

Table 1: Projects Funded through the Renewable Energy Resources Program, 1999-2011.

In 2011, \$2.4 million in incentives was provided to support over \$6 million in renewable energy projects. This consisted of \$1,581,298 in solar and wind energy rebate incentives, \$787,700 in other grants.

This report contains four parts:

- Part I: Authorization and Funding Sources
- Part II: Report on the Renewable Energy Resource Base in Illinois
- Part III: Report on Program Implementation
- Part IV: Report on Legislative Recommendations

Part I:

Authorization and Funding Sources

Authorization

The Renewable Energy, Energy Efficiency, and Coal Resources Development Law (20 ILCS 687, “the Law”) of 1997 directs the Department of Commerce and Economic Opportunity (the Department) to administer the Renewable Energy Resources Program (RERP) and to provide grants, loans and other incentives to foster investment in, and the development and use of, renewable energy resources. The Law directs the Department to establish eligibility criteria for the incentives and to review them annually and adjust them as necessary. The provisions of this Law are repealed ten years after the effective date unless renewed by act of the General Assembly. The current sunset date is December 12, 2015.

The Law defines “renewable energy resources” to include energy from wind, solar thermal energy, photovoltaic cells and panels, dedicated crops grown for energy production and organic waste biomass, hydropower that does not involve new construction or significant expansion of hydropower dams and other such alternative sources of environmentally preferable energy. "Renewable energy resources" does not include, however, energy from the incineration, burning or heating of waste wood, tires, garbage, general household, institutional and commercial waste, industrial lunchroom or office waste, landscape waste, or construction or demolition debris.

Contributions to the Renewable Energy Resources Trust Fund

Funding for the Renewable Energy, Energy Efficiency, and Coal Resources Development Law is required by the Renewable Energy Resources and Coal Technology Development Assistance Charge as follows:

- 1) \$0.05 per month per residential electric service;
- 2) \$0.05 per month per residential gas service;
- 3) \$0.50 per month per nonresidential electric service taking less than 10MW of peak demand during the previous calendar year;
- 4) \$0.50 per month per nonresidential gas service taking less than four million therms of gas during the previous calendar year;
- 5) \$37.50 per month per nonresidential electric service taking 10MW or greater of peak demand during the previous calendar year;
- 6) \$37.50 per month per nonresidential gas service taking four million or more therms of gas during the previous calendar year.

Fifty percent of the moneys collected are deposited into the Renewable Energy Resources Trust Fund. The remaining fifty percent is deposited in the Coal Technology Development Assistance Fund for use under the Illinois Coal Technology Development Assistance Act. The Renewable Energy Resources Trust Fund receives approximately \$5,000,000 to \$6,500,000 per year to fund eligible projects.

Part II: Report on the Renewable Energy Resource Base in Illinois

The renewable energy resources in Illinois with significant growth potential include biogas and biomass energy, solar energy and wind energy resources. The following sections discuss each of these renewable energy resources.

Biogas and Biomass

Biogas refers to the methane produced by livestock manures and wastes, municipal waste water sludge, and segregated organic wastes. Biogas produced by anaerobic digestion is a potential source of energy, can destroy disease causing pathogens and reduce the volume of disposed waste products. Biomass refers to plant and plant-derived material that can be used either as a source of energy or for its chemical components and includes dedicated crops grown for energy production as well as agricultural residues. Biomass commonly refers to organic material grown to produce biofuels but also includes organic materials combusted to produce heat energy.

Although much of the resource is highly cost-constrained for electric generation in the near future (though not for transportation fuels, e.g., ethanol), the economics of biogas and biomass to energy systems are improving. Gasification and co-firing technologies with combined heat and power are technologically feasible for large-scale electric generation in Illinois. While such systems would likely create new markets for farmers, and reduce pollution levels for all traditional power plant pollutants, the economic feasibility of the systems, particularly in competition with other renewable energy resources such as wind energy, will hinge on further improvements that reduce collection and transportation costs.

Created in 2010, the Illinois Biomass Working Group (IBWG) continues to help link farmers businesses, universities, and public agencies to share information and collaborate to advance biomass energy in Illinois. The working group is managed by the Value Added Sustainable Development Center at the Illinois Institute for Rural Affairs at Western Illinois University. The IBWG has periodic meetings and field visits to biomass-related businesses, and has also created a website for the working group to share information.



The Illinois Biomass Working Group's website is at <http://www.illinoisbiomass.org/>.

Through the USDA Farm Services Agency, the Biomass Cop Assistance Program (BCAP) provides incentives to eligible farmers and forest landowners for the establishment and production of biomass crops for heat, power, bio-based products and biofuels. BCAP project areas are specific geographic areas where producers grow eligible biomass crops. Producers then receive annual payments for growing those crops.

The continued support through the Renewable Energy Resources Program and other state and federal incentives, as well as research and development support through the Department of Agriculture and Illinois' universities will be crucial in the further development of biogas and biomass resources in Illinois.

Solar Energy

Solar technologies use energy from the sun to provide heat, light, hot water, electricity and even cooling, for homes, businesses, and industry. Illinois has a significant solar energy resource and installations of solar thermal and solar photovoltaic (electric) systems are vastly increasing. With both governmental and private sector partners, Illinois is a Midwest leader in the development of solar energy resources.

With the new requirements for solar under the renewable portfolio standard (enacted in 2010), Illinois is starting to see the development of solar farms. Two solar farms received long-term contracts through the Illinois Power Agency to help meet the requirements of the Renewable Portfolio Standard. Invenergy will be developing a 20 MW solar farm in LaSalle County. Rockford Solar Partners was also selected by the Illinois Power Agency to provide solar energy, and is planning to install a 3 MW solar farm.

There have also been a number of solar projects that were awarded American Recovery and Reinvestment Act (ARRA) grants through DCEO. Through the Community Renewable Energy Program, DCEO is providing \$4.3 million in grant support for 15 commercial-scale solar PV projects with a total capacity of 3.8 MW. DCEO is also providing a \$4 million grant to support the development of the first 3 MW of the Rockford Solar Partner's solar farm. Several of these projects were completed in 2011, and most of the remaining solar projects should be completed in 2012.

There was also new legislation enacted in Illinois in 2011 that will affect the solar energy market. Public Act 097-0616 stipulates that at least .5% of the Illinois Renewable Portfolio Standard (RPS) in 2013 shall come from distributed renewable energy generation, .75% by 2014, and 1% by 2015. Half of the distributed generation requirement shall come from systems 25 kW or smaller. The Illinois Power Agency started conducting public workshops in the fall of 2011 to try to develop a plan for implementing this requirement into the IPA's procurement planning process.

Since 1999, approximately 7.5 MW of photovoltaic systems and \$22 million in solar thermal systems have been supported with over \$21 million in grants and rebates through the Renewable Energy Resources Program. While the price of solar continues to fall, financial support through the Renewable Energy Resources Program is necessary to continue to encourage the development of solar energy resources throughout Illinois.

Wind Energy

Wind is a clean, inexhaustible energy resource and is one of the fastest-growing forms of electricity generation in the United States. The potential for wind energy development in Illinois is great. The U.S. Department of Energy's National Renewable Energy Laboratory (NREL) estimates over 9,000 MW of commercial wind energy potential in the state. Wind energy technology has improved dramatically over the last twenty years, with costs dropping from over 20 cents per kWh at that time to generally around 3.5 to 5 cents per kWh today. Modern wind generation investments, at current prices, can be competitive with more traditional sources of new electric generation and therefore a valuable hedge against higher electric costs that may result from over reliance on traditional energy resources. The federal production tax credit (or PTC, currently valued at 2.1 cents per kWh) was renewed through 2012; however, with the future of the PTC beyond 2012 uncertain, wind farm development is starting to slow down nationally.

In Illinois, over 2,743 MW of wind energy capacity have been installed, ranking Illinois 4th in the country in wind power capacity. Illinois added 692 MW of wind energy capacity in 2011, 2nd only to California in the amount of capacity added for the year. There are also many more wind projects being developed in Illinois, with 615 MW currently under construction and another 3,500 MW of projects permitted.

The Illinois wind industry should continue to grow with an RPS that requires the Illinois Power Agency to procure 25% of the power needs to be met with renewable energy by 2025, 75% of which must be wind power. In 2010, the Illinois Power Agency had its first RFP for long-term agreements for renewable energy. There was no RFP for long-term agreements conducted with the 2011 IPA procurement.

Wind energy has a significant economic impact on the state. According to a study conducted by the Center for Renewable Energy at Illinois State University, the wind industry has supported

Illinois Wind Projects and Wind Resources

2012

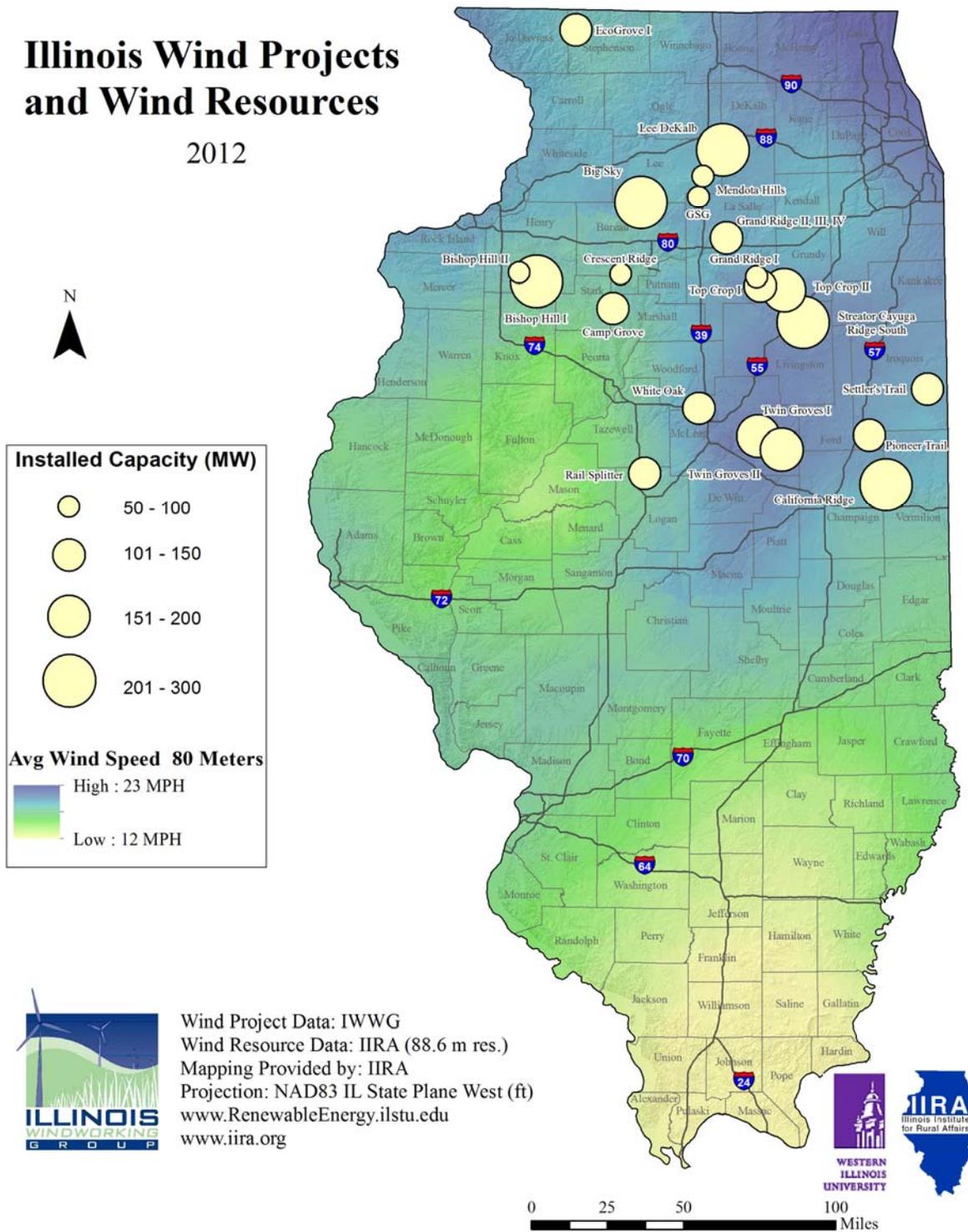


FIGURE 1: The Illinois Windpower Projects Map, prepared by the Illinois Institute for Rural Affairs and the Illinois Wind Working Group, indicates over 2,743 MW of installed wind capacity in Illinois.

1,473 jobs for the construction of the wind farms and 110 long-term jobs for the operations of the wind farm. The wind farm developments also provide indirect and induced economic impacts to the communities they are built in, supporting about 10,000 jobs during the construction phases and 494 long-term jobs. Furthermore, these wind farms have provided \$8.3 million per year in lease payments to landowners, and provide over \$18 annually in property taxes to local governments.

There is also interest in small-scale and community-scale wind turbines in Illinois. Beginning in FY 2010, DCEO started providing rebates for wind turbines under 100 kW. Four rebates were paid to support about 19 kW of small wind projects in 2011. There are also a number of community-scale wind projects supported by the ARRA funds. Through the Community Renewable Energy Program, DCEO is providing \$2.7 million to support over 2 MW of wind energy systems for universities, junior colleges, and municipalities.

Part III: Report on Program Implementation

RERP Implementation Summary, January 1997 to December 2011

With the passage of the Law in December 1997, the Department developed draft grant and rebate program guidelines and established eligibility criteria. These drafts were reviewed in 1998 by trade and advocacy organizations such as the University of Illinois, American and Illinois Solar Energy Associations, American Wind Energy Association, U.S. Dept. of Energy, U.S. Dept. of Agriculture, Center for Neighborhood Technology, and Environmental Law and Policy Center. The Department developed final program guidelines and released the program in November of 1998 with the first RERP grants and rebates awarded in March of the following year. As of December 2011 the Renewable Energy Resources Program has awarded a total of 184 grants and over 1200 rebates totaling more than \$45 million in incentives for renewable energy projects in Illinois.

2011 Renewable Energy Resources Program

Solar and Wind Energy Rebate Program

The Solar Energy Rebate was expanded to include small wind (under 100 kW) projects in FY2010. Demand for the Solar and Wind Energy Rebate Program was very strong in 2011; the Department received about \$5 million in rebate request in the four weeks the program was opened. However, the Department was not able provide rebates for a significant portion of these request because fewer funds were available for the program due to “borrowing” that occurred from the renewable energy fund to use towards the general state budget. One hundred and nine projects were funded for the installation of solar thermal, solar photovoltaic (electric), or wind turbine projects in 2011, compared to 221 projects in 2010 and 184 projects in 2009.

Table 2: FY2011 Solar and Wind Rebate Program Results

Type of System	Number of Projects	Rebate Amount	System Capacity (kW)
PV	80	\$1,060,532	727
ST	25	\$329,191	----
Wind	4	\$48,034	19

At current funding levels, the Department is unable to sustain the program’s rate of growth. In FY2011, the program was only open for five weeks because of the overwhelming number of applications received. Over 300 applications were submitted by December, and less than half of these projects were funded because all of the funds are depleted. In, FY2012, which opened in September 2011, the program received over 300 applications and was closed in 10 days because there was already more than enough applications to deplete all of the rebate funds for the year.

Biogas and Biomass to Energy Grant Program

In 2011, a grant was initiated with the Energy Resources Center (ERC) at the University of Illinois at Chicago to administer the biogas and biomass to energy grant program. Over \$400,000 of funding is available for grants to applicants interested in installing a biomass or biogas to energy system. ERC is currently reviewing several applications and thus far has selected one project for funding, a 138 kW CHP system fueled by biogas from a municipal sanitary district.

Community Solar and Wind Grant Program

The Department issued a Request for Applications (RFA) in September 2011 for Community Solar and Wind projects. The program offers incentives to businesses, non-profit organizations, and public sector entities interested in solar or wind energy systems to meet a portion of their energy needs. Businesses are eligible for incentives up to 30% of total project cost, and non-profit and public sector entities are eligible for incentives for up to 50% of the total project cost.

The Department received 28 applications requesting \$3.8 million in incentives. In late 2011, The Department selected 15 projects (11 solar PV, 3 solar thermal, one wind energy project) to be awarded about \$2 million in support. These projects are expected to support the development of over 800 kW of solar and wind energy projects and will cost over \$6 million to complete.

Renewable Energy Business Development Grant Program

The Department also issued a Request for Applications (RFA) in September 2011 for Renewable Energy Business Development projects. The program offers incentives to businesses that what to start or expand the development of renewable energy businesses and component manufacturing in Illinois.

Applicants are eligible for grants up to 50% of eligible projects, with a maximum award of \$500,000. Eligible expenditures include the purchase and installation of machinery, equipment

and new industrial systems, project necessary site improvements, technical or engineering services for process improvements in key functions, and /or the conversion of existing processes.

The Department received 11 applications requesting over \$3.5 million and were still reviewing the applications at the end of 2011. Funding decisions on these applications will be made during the first quarter of 2012.

Part IV: Report on Legislative Recommendations

Rising energy costs in Illinois are taking a toll on economic development and tightening annual budgets for homeowners, businesses, non-profit organizations, and local governments. As energy prices rise so has demand for the Department's Renewable Energy Resources Program. For example, the FY2012 Solar and Wind Energy Rebate Program received over 300 applications requesting over \$4 million in incentives within 10 days of program opening in September 2011. The program was closed after 10 days because the 300 applications were more than the available funds for the program for the fiscal year.

Two actions would help the State to encourage the development of renewable energy in Illinois. First, a prohibition of "borrowing" from the renewable energy fund for the state general fund would allow for program continuity and lessen the disruptions in the renewable energy markets in Illinois that the lack of funding has caused over the last few years. Many renewable energy projects are put on hold or cancelled when the state goes several months without funds available for the RERP. Second, an increase in the annual RERP funding is necessary to encouraging the long term growth of renewable energy and supporting economic development in the state of Illinois. An increase in the Renewable Energy Resources and Coal Technology Development Assistance Charge would provide additional funding with little cost to ratepayers. For example, a doubling of the charge would only increase a residential customer's electrical service bill by \$0.60 per year, while increasing the funding to the RERP programs.