RENEWABLE ENERGY RESOURCES PROGRAM REPORT

January through December 2008

Illinois Department of Commerce and Economic Opportunity
Bureau of Energy and Recycling
Renewable Energy Resources Program
620 East Adams
Springfield, Illinois 62701

Executive Summary

Since its inception, the Renewable Energy Resources Program (RERP) has successfully facilitated over $302 million of total investment in renewable energy projects in Illinois through $33 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.

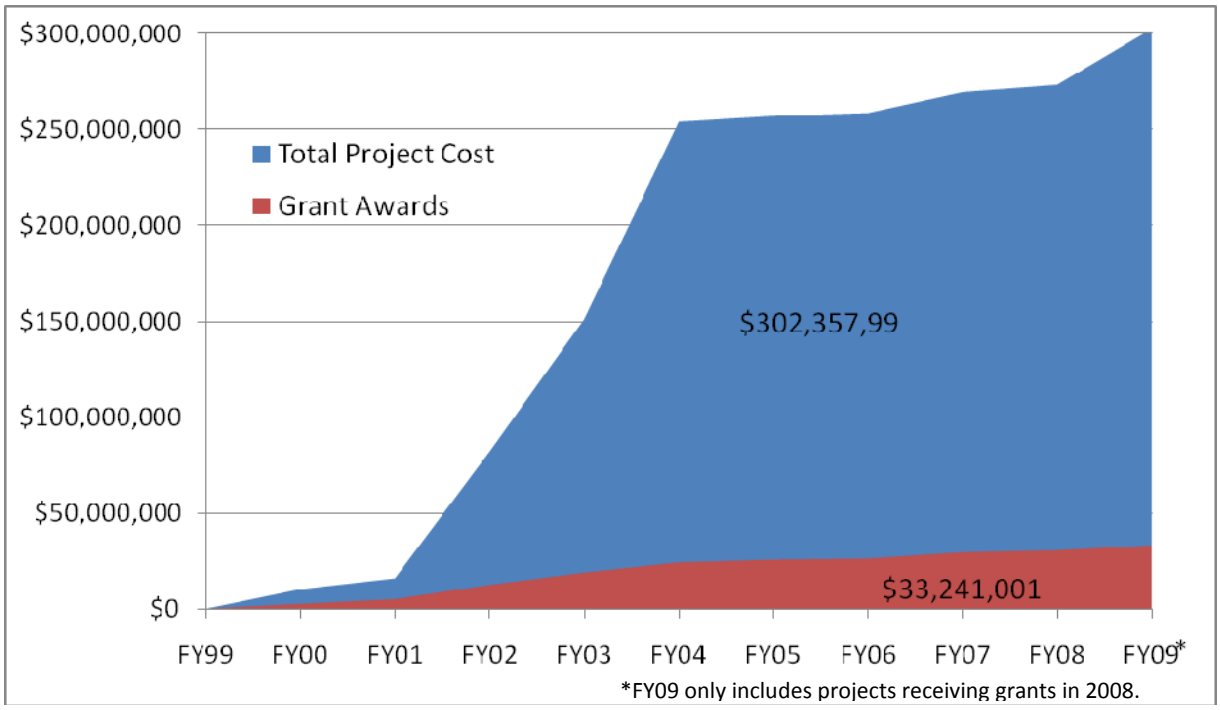

FIGURE 1: Projects Funded through the Renewable Energy Resources Program, 1999-2009.

In 2008, $3,365,546 in incentives was provided to support $32,012,013 in renewable energy projects. This consisted of $1,191,500 in solar energy rebate incentives, $1,059, 046 in solar energy grants, and $1,015,000 for renewable energy business development 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 The provisions of this Law are repealed ten years after the effective date unless renewed by act of the General Assembly.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.

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

PHOTO: Switchgrass, a potential component in biofuels, growing 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.

In 2004, Solargenix, a manufacturer of compound parabolic solar thermal collectors, opened a production facility on Chicago's South Side. A photovoltaic manufacturer, Wanxiang America, will be opening a facility in Rockford in 2009-10, creating 60 new jobs for the region. There has also continued to be growth in the number of solar installers in Illinois.

PHOTO: A solar thermal installation that produces domestic hot water in Chicago, Illinois (left) and a 4kW photovoltaic system in rural Will County (right).

Approximately 2.9 MW of photovoltaic systems and $20 million in solar thermal systems have been supported through the Renewable Energy Resources Program. Continued financial support through the Renewable Energy Resources Program is necessary 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. Furthermore, the federal production tax credit (or PTC, currently valued at 2.1 cents per kWh) was renewed through 2012; this incentive will help sustain the wind energy industry through the current economic recession.

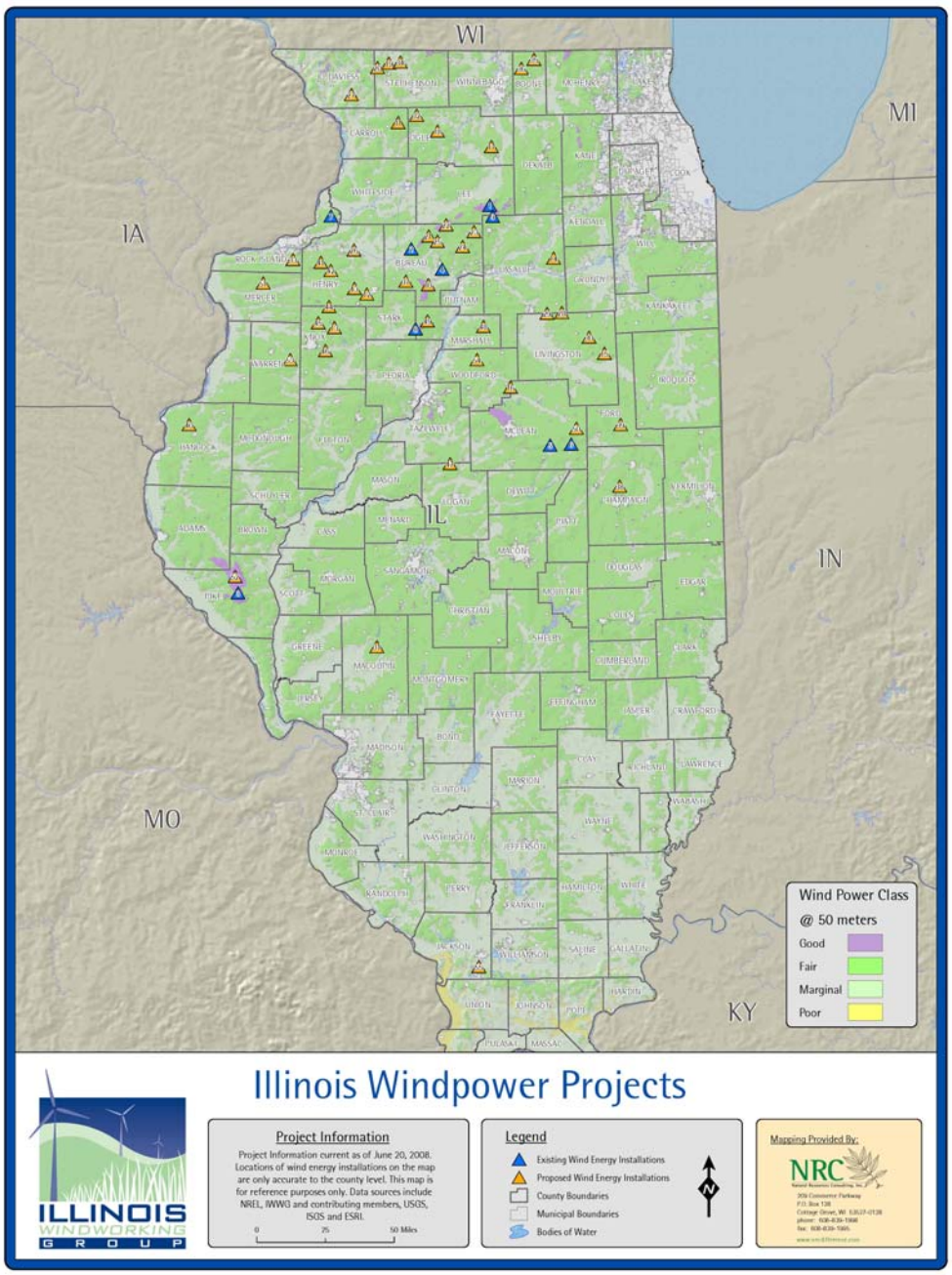

FIGURE 2: The Illinois Windpower Projects Map, prepared by Natural Resources Consulting for the Illinois Wind Working Group, indicates over 900 MW of installed wind capacity in Illinois.

Over 918 MW of wind energy capacity have been installed in Illinois, with 719 MW of additional wind capacity currently under construction, and another 1,360 MW of projects that have been permitted. Illinois currently ranks 9th in the country for wind power capacity.

Part III: Report on Program Implementation

RERP Implementation Summary, January 1997 to December 2008

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 2007 the Renewable Energy Resources Program has awarded a total of 154 grants and 758 rebates totaling more than $34 million for renewable energy projects in Illinois.

2008 Renewable Energy Resources Program

Solar Energy Rebate Program

Demand for the Solar Energy Rebate Program grew again in 2008 with 181 projects being funded for the installation of solar thermal or solar photovoltaic (electric) equipment. The Department funded 157 projects in 2007 and 144 projects in 2006. At current funding levels, DCEO is unable to sustain the program's rate of growth; this year all program funds were committed by early March.

Solar Energy Incentive Program

The solar energy incentive program is for large photovoltaic and solar thermal projects, typically projects over $50,000. In previous years, this program was only for solar thermal projects. In 2008, it was expanded to include photovoltaic projects at facilities targeting LEED certification or projects using innovative technologies or financing. This year the program has funded 10 projects, 5 photovoltaic and 5 solar thermal projects. The Department provided $961,046 in funding in support over $12 million in solar installations. The largest project ($9 million) funded under this program is with the City of Chicago; this project will be a 700 kW PV system at one of the City's water pumping station. The 4,800 solar panels are expected to provide approximately 1,000,000 kWh of electricity per year.

Renewable Energy Business Development Program

The focus of the Renewable Energy Business Development Grant Program is to support domestic renewable energy production through the development of renewable energy businesses and component manufacturers. Projects that develop and expand the renewable energy sector and

corresponding supply chain while improving the economy of the State through new business development have been targeted. In 2008, four projects were funded, ranging from an outreach project to support for the development of a solar manufacturing facility.

Wanxiang America is receiving a grant to construct a solar photovoltaic module assembly plant in Rockford. The facility will support 60 new jobs and will initially have the capacity to produce 20 MW of solar panels a year. Another grant to Adams Electric Cooperative will support the purchase and installation of a 900 kW wind turbine in west central Illinois that will provide power for several hundred homes in the cooperative's service area.

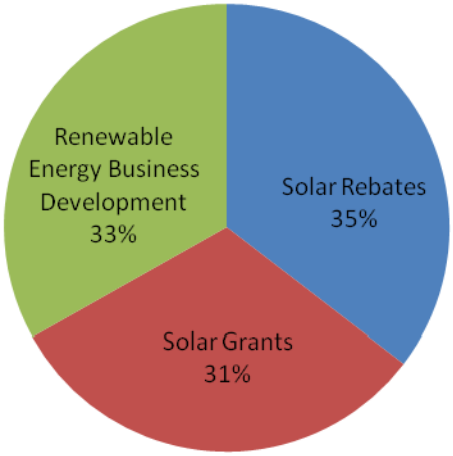

FIGURE 3. 2008 Incentives by Renewable Energy Program

For fiscal year 2010, new program information and grant opportunities will be posted to the Department's website at www.illinoisenergy.org.

Part IV: Report on Legislative Recommendations

Rapidly rising energy costs in Illinois are taking a toll on economic development and tightening annual budgets. As energy prices rise so has demand for the Department's Renewable Energy Resources Program. For example, the most recent Request for Applications for the Renewable Energy Business Development Program generated over $15 million in project proposals while only $1.7 million in funding was available. Commitments to solar energy rebate applicants were stopped in March as a result of funding limitations.

Two actions would help the State to encourage the development of renewable energy in Illinois. First, a prohibition of "sweeping" the renewable energy fund would allow for continuity 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.