

<http://www.iowadnr.com/energy/index.html>



**Mission:** Iowa's state energy office is dedicated to increasing the use of energy efficiency and renewable energy technologies while helping ensure the reliability of the state's power resources.

**Introduction:** The Energy Section of the Energy and Waste Management Bureau located in the Environmental Services Division of the Department of Natural Resources is Iowa's state energy office. This report details the latest fiscal year of Energy Section activities. It includes the results of grant activities completed in partnership with the U.S. Department of Energy as well as other energy-related programs and projects that the Energy Section has undertaken to advance its mission.

**Iowa Energy Bank.** This program provides the technical and financial assistance necessary for Iowa public schools, hospitals, private colleges, private schools, and local governments to implement energy management improvements. The Energy Bank has been responsible for saving Iowa non-state public facilities many hundreds of thousands of dollars on yearly energy costs. Staff acted on some 65 client inquiries, performed marketing visits to 12 potential client facilities, conducted 19 client energy audits, and provided clients two comprehensive engineering study reviews for technical quality.

**State of Iowa Facilities Improvement Corporation (SIFIC).** A non-profit organization that contracts with the Energy Section for staff, SIFIC is a full-service program designed to implement energy efficiency projects in state owned and operated facilities. Governor Vilsack's Executive Order 41 in 2005 has helped accelerate the implementation of several SIFIC projects, and has been a catalyst for renewed interest in SIFIC by other state agencies. SIFIC staff assisted seven clients with program operational issues, completed three marketing visits with potential clients, and performed 14 client energy audits.

**Renewable Energy.** Staff provide training and assistance for the implementation of renewable energy technologies statewide. During this fiscal year, Energy Section staff completed Solar Yellow Pages and Wind Yellow Pages documents, and posted them on the Energy Section Website. In addition, staff assisted 76 clients with questions on solar energy, 89 clients with questions on wind energy, 78 clients with questions on ethanol, eight clients with questions on combined heat and power, 37 clients with questions on biodiesel, and 54 clients with questions on biomass.

**Community-Based Digester Outreach.** Anaerobic digesters can produce methane for combined heat and power or for replacing natural gas. As a major on-going initiative of the Energy Section, staff have visited numerous Iowa communities with high concentrations of animal feeding operations, food-processing wastes, and other organic waste streams in order to introduce and promote anaerobic digesters. From providing assistance to well over 40 clients, a commercial feasibility study has been conducted in Webster City, and investors are planning construction of a large digester project in Hull, Iowa. We are also promoting a closed-loop system, whereby animal-feeding operations would provide the manure for digesters that produce methane for ethanol plants that in turn produce distillers' grains for animal-feeding operations.

**USDA Farm Bill § 9006.** Energy Section staff have participated in assisting Iowa farmers, ranchers, and rural small businesses apply for grants to fund energy-related projects under this federal legislation. In 2006, the Energy Section and our partners provided technical advice and support for 80 applications. Iowans received

52 of the 375 grants awarded this year, second highest in the country. Iowa grant awards totaled \$1,190,854. Additionally for 2006, Iowa received 10 of the 16 combination 'grant/guaranteed loan' awards. Of these combination awards, Iowa applicants received \$7,300,560 in guaranteed loans and \$2,514,710 in grants.

**Transportation and Alternative Fuels.** Current and future transportation fuel prices, alternative fuels purchased, natural gas prices, propane prices, and heating oil prices are routinely monitored and analyzed by the Energy Section. Eighteen press releases were issued reporting on our analyses of that information. Staff also answered questions from 42 individuals about energy efficient transportation and alternative fuels, and responded to 132 communications from news media on those topics and on fuel prices.

**Energy Efficiency.** Energy Section staff answered 61 inquiries on energy efficiency from contractors, state agencies, and the general public, and 43 clients were helped with building energy code questions.

**Solar Project.** This was a collaboration of the Iowa Renewable Energy Association, Alliant Energy, the City of Cedar Rapids, the Thorland Company (owners of the property where the Project was installed), and the Energy Section. Workshops were conducted where participants helped erect an innovative multiple tracking solar array in the "New Bohemia" brownfield and historical redevelopment neighborhood. The array provides 7,200 watts of electricity and, along with an interactive street-level information kiosk, serves as an educational tool and a visual symbol of the neighborhood's renewal.

**Rebuild Iowa '05-'06.** The accomplishments facilitated by this Rebuild America grant included partnering with the University of Northern Iowa, Scott Community College, Hamilton County, and Muscatine County to educate communities about energy efficiency and renewable energy, create an energy-related 'job shadow' program, facilitate implementation of energy management improvements, and produce a University/Community Energy Educational video.

**Building America.** With U.S. Department of Energy funding, the Energy Section contracted for research into, and production testing of, a highly energy efficient and affordable model home design. Construction of the prototype was recently completed by a community college carpentry program in Fort Dodge, and the final design specifications and carpentry class curriculum are to be posted on the Internet.

**Wood By-Product Workshop.** Generators of wood by-products were brought together with potential end-users to investigate opportunities for using those by-products as a renewable energy resource.

**Energy Efficiency and Renewable Energy Presentations.** Energy Section staff presented at a total of 38 conferences, workshops, and community meetings.

**Energy Emergency Preparedness.** In the event of an energy-related emergency, the goal of the energy emergency preparedness program is to help enable immediate response collaboration among energy providers, state and local governments, and federal programs. The Energy Section periodically updates Iowa's energy emergency plan, and annually holds a Winter Fuels Forum for industry representatives to discuss with interested attendees issues involved in each upcoming heating season.

**Overview and Prospects:** With assistance from the U.S. Department of Energy State Energy Program Formula Grant and other federal sources, we have informed and assisted people with renewable energy and energy efficiency applications. The Energy Section serves Iowa citizens, communities, and businesses by helping them make smart energy choices for the future.

Because the Energy Section is funded almost entirely by those federal sources, staffing declined about 40% in the last 15 months due to budget concerns. To overcome those shortfalls, we have regrouped to concentrate on the work we do best and the work that is not being done by others. Some of the current and prospective initiatives we are developing include:

- ◆ 'Tall Towers' Wind Energy Research. The Energy Section has contracted with the Iowa Energy Center at Iowa State University for research into high-altitude wind conditions unique to the upper Midwest region. Results of this research will assist market growth in new "Tall Tower" technologies.
- ◆ Rebuild Iowa 'Energy Clean Sweep'. This project is directed toward obtaining \$450,000 worth of energy savings in targeted institutional, industrial, Main Street commercial, and residential buildings and facilities in Fort Dodge, Iowa. Their Action Plan provides for energy audits, financing and implementation of energy management improvements, media campaigns, organized volunteer activities, and contractor and building operator training workshops.
- ◆ Bio-Products Promotion. The 'E-Community Grinnell' organization has been contracted to facilitate the development of market-conditioning efforts in Iowa that will reduce reliance on petroleum-based products in that community by increasing bio-product procurement and use; particular attention being paid to biofuels and replacement machine lubricants.
- ◆ Industrial Technology Curriculum. A contract with Kirkwood Community College has them working with industry and other stakeholders to design a full course of study for training students and in-the-field practitioners in the repair and maintenance of energy efficiency and renewable energy equipment.
- ◆ Wind Turbine 'Big Blades'. We have submitted a grant application to the National Renewable Energy Laboratory to bring to Iowa a facility that would be the largest in the United States for testing wind turbine blades of up to 70 meters or more in length.
- ◆ "Bio-City". The Energy Section is helping facilitate the development of a community in Iowa that would generate the majority of its power from renewable energy.