

Iowa Energy Center : Assisting Iowa Business and Industry

The Iowa Energy Center assists Iowa businesses and industries in a number of ways. These include developing new approaches to help firms to improve their energy efficiency; supporting the development of education and training for individuals in business and industry; and supporting researchers at Iowa's colleges and universities as they assist industry.

Below are some specific examples of the Iowa Energy Center's work.

Total Assessment Audit

The Energy Center has helped develop an approach to industrial efficiency called the Total Assessment Audit. Unlike a traditional energy audit, which focuses only on energy-using systems, a Total Assessment Audit explores all issues that could improve the profitability of the firm. The underlying premise of this holistic approach is when a firm is truly profitable, it will be highly productive and will minimize its waste of capital, labor, materials and energy.

One case study of this approach applied to a foundry in Washington, Iowa saw the firm's energy use per ton of product drop by 29% while the firm's total output rose 83%. A second case study at a manufacturing plant in Des Moines led to an improvement in throughput of 85%. The Energy Center is now working with the Iowa Manufacturing Extension Partnership to make this novel approach widely available to Iowa industries.

State Industries of the Future

Working with ISU Extension, the Energy Center is helping to develop a State Industries of the Future Program for Iowa's metal casting and agriculture industries. This state level program will assure Iowa industries have timely access to new

information developed under the U.S. Department of Energy's national Industries of the Future research and development program. It will also provide a conduit for Iowa's concerns to be conveyed to the national program. Moreover, it will provide a forum for Iowa metal casters and agribusinesses to address issues unique to the state. Over time, other Iowa industries that fit within the Department of Energy's Industries of the Future designation will likely be added to the state program.

Industry Training

Timely, thorough training is essential for personnel in business and industry to remain effective in their jobs. The Energy Center has helped develop a number of training and education programs for business and industry.

For example, the Energy Center has been an active sponsor of the Compressed Air Challenge, a national consortium of 16 sponsors (including equipment manufacturers and distributors) seeking to improve the effectiveness and efficiency of compressed air systems. Two levels of training delivered by a cadre of certified trainers are used to improve the level of knowledge of compressed air users in industry, and the distributors and other providers who serve industry. As a sponsor of the Compressed Air Challenge, the Energy Center has presented three full-day seminars during the past year and has several more planned for 2001.

Commercial Buildings Training

Business and industry rely on buildings to house their operations. These buildings are increasingly operated by direct digital control (DDC) systems. Proper specification, installation and operation of these systems can save energy and money while producing desirable environments for employees.

The Energy Center funded and helped create the first web-based catalog of DDC systems that allows for comparisons of competing brands. This unique catalog, *DDC Online*, and an accompanying manual describing issues in using DDC systems are publicly available to all designers, specifiers and users of DDC systems through the Energy Center's web site. The direct URL for this site is www.energy.iastate.edu/DDC_online/index.htm.

Grants

Through its competitive grants process, the Energy Center supports researchers at Iowa's educational institutions who work with industry. In one project, a researcher has assisted Iowa Thin Films, a manufacturer of photovoltaic systems, to explore a new generation of more efficient solar cells. In another project, a researcher working with Pioneer Hi-Bred developed a gasifier to combust waste seed corn while generating a stream of combustible gas. This high temperature process disposes of a hazardous waste (out of date seed corn treated with fungicide) and produces an energy stream that can be used to dry more

seed corn. The first commercial version of this gasifier has been installed by Pioneer at their Toledo, Iowa plant.

BECON

To provide an infrastructure and focal point for research that explores converting biomass to fuels and chemicals, the Energy Center constructed the BECON (Biomass Energy CONversion) facility, in 1999. BECON is designed to support pilot plant-scale research, thereby bridging the gap between laboratory bench-scale research and the commercial adoption of new technologies. Academic researchers and their industrial partners are using BECON's capabilities to develop a number of technological approaches for converting biomass into value-added agricultural products.

Web Site

For more information on the wide range of projects conducted and sponsored by the Iowa Energy Center, please visit our web site. The address is www.energy.iastate.edu. To tour any of the Energy Center's facilities, contact our main office at 515-294-8819. ■