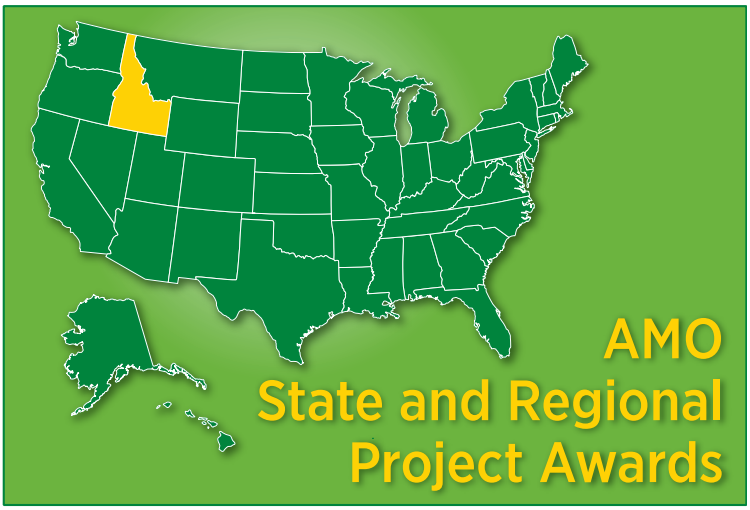
Idaho *Save Energy Now* – Industries of the Future

Idaho is facing capacity constraints with electricity generation and peak transmission capacity, which could be alleviated through greater efficiency in the industrial sector. Idaho's Office of Energy Resources (OER) has identified a significant barrier for industrial facilities to implement efficiency projects—a lack of technical plant personnel. OER has developed a project to build professional industrial energy engineering expertise to sustain the state's progress on energy and environmental issues and to continue to undertake independent energy efforts in the future. This is being accomplished by demonstrating the value of in-house energy engineering expertise and by offering assistance in efficiency project implementation.

One of the unique things that OER is doing as part of this project's scope is to focus on implementation of industrial energy efficiency projects. OER has developed the Energy Engineering Demonstration Project (EEDP), conducted in partnership with the J.R. Simplot Company. EEDP demonstrates the cost effectiveness and value of hiring energy engineers dedicated solely to energy efficiency improvement project implementation and energy culture change within corporations. This program is increasing implementation of *Save Energy Now* assessment-identified projects at J.R. Simplot's Idaho facilities.

OER is also developing an investment-grade combined heat and power (CHP) feasibility analysis—the Utility-Industry CHP Project Feasibility Study—of an estimated 45 MW CHP project at one of The Amalgamated Sugar Company's (TASCO's) facilities, in partnership with TASCO and the Idaho Power Company. This study will be a unique industry-utility partnership and will culminate in the development of a data tracking system to report on the impacts of implemented efficiency projects. OER is leveraging existing funds to conduct Energy Saving Assessments (ESAs) to enhance the outcomes of the project. OER also may use the ESAs as a model for conducting the CHP feasibility study.

OER will also embark on a process to develop the Industrial Refrigeration Energy Savings Assessment protocol and analysis tool. This will complement the existing suite of ESA tools provided by the U.S. Department of Energy (DOE) Advanced Manufacturing Office (AMO), as well as provide further market reach than a standalone technology demonstration. The tool will seek to identify sorption heat recovery applications to optimize refrigeration and other energy systems that are common in food processing facilities. This project will result in the development of a case study.



Project Description

Funding Amount: $900,000
Funding Source: American Recovery and Reinvestment Act
Program Period: 9/30/2009 to 9/30/2013

Project Success Highlights

The project with J.R. Simplot is making significant progress. Highlights from the project's success include:

- Implemented energy savings of 0.272 trillion Btu.
- Three of Simplot's facilities are now EPA Energy Star Certified (Aberdeen, Idaho; Moses Lake, Washington; and Othello, Washington).

The Industrial Refrigeration System Analysis Tool (ISAT) project involves both industrial partners from Davisco Foods and McCain Foods, as well as trade ally partners from Kinergetics and Bassett Mechanical. Achievements to date include:

- Five completed scoping studies
- Two in-depth (data logged) studies

Primary Investigator

Idaho Office of Energy Resources, Boise, ID

Project Partners

J.R. Simplot Company, Boise, ID
Idaho Power Company, Boise, ID
Northwest Energy Efficiency Alliance, Portland, OR
Washington State University – Extension Energy Program, Olympia, WA

Progress and Milestones

Activity Description	Goal	Completed to Date
Assessments	12	5
Identified Energy Savings (Trillion Btu)	2.5	2.9
Implemented Energy Savings (Trillion Btu)	0.167	0.272
Trainings	8	8
Individuals Trained	20	29
Pilots / Demonstrations	1	1
Plants Impacted	229	229

(As of June 2011)

Unlike similar projects in other states, the Idaho program is not focused on offering multiple trainings or technology demonstrations. Instead, OER is focusing on a few key industrial partners and working to establish best practices for the unique challenges with which Idaho manufacturers have to contend.

J.R. Simplot reports progress to OER on a quarterly basis. To date, the progress reports indicate that two energy efficiency engineers have been hired as part of this program. Each of these engineers is committed to working with eight industrial facilities and their teams for a total of 16 facilities, four of which are in Idaho. In addition, through a partnership with the Bonneville Power Administration's Energy Smart Industrial Partner Program, a third energy efficiency engineer has been hired at the Afton, Wyoming mine. Since September of 2008, with the assistance of these energy efficiency engineers, the J.R. Simplot plant has saved more than 653 billion BTU in energy. Of the total energy savings at the J.R. Simplot plant, 0.272 trillion Btu has been saved during the time period of this grant.

Two memorandums of understanding (MOUs) have been signed between OER, Idaho Power Company, and The Amalgamated Sugar Company for the completion of the Utility-Industry CHP Project Feasibility Study. The first high-level feasibility study was completed in July 2010. It is estimated that three feasibility analyses may need to be completed prior to implementation.

The Industrial Refrigeration Energy Savings Assessment protocol and analysis tool is in progress. The Conduct Heat Recovery Sorption Heat Pump Demonstration Feasibility Studies have been completed. There were two more studies completed than planned, and five scoping studies and two in-depth (data logged) studies have been completed to date.

3 Year Project Benefits

- Estimated annual energy savings of 0.055 trillion Btu and 7.56 million kWh.
- Reduce energy intensity by 2.5% each year for 10 years.
- J.R. Simplot energy engineers to save twice the annual cost of their services.
- Improve OER reporting capabilities and a sustainable project infrastructure.
- Improve air quality and source fuel efficiency through displacement of coal-fired boilers with natural gas.
- Eliminate transmission line losses due to project proximity to large urban loads.
- Demonstrate the technical and economic viability of the sorption heat pump.
- Develop an Industrial Refrigeration ESA protocol and tool to provide further market reach.

Applications in Our Nation's Industry

This project will expand a partnership among academia, state offices, and utilities that will continue to help reduce the energy intensity of industrial manufacturers in Idaho. The industrial energy efficiency project will reduce industrial energy intensity and its associated carbon emissions throughout the state.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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