

# Delivering Energy Solutions for Farms, Factories and Families

## Our Mission

To advance environmental and economic well-being by providing unmatched energy services, products, education and information based on world-class research.

## About Us

Our staff of energy engineers, energy specialists, technical experts, software developers, and energy research librarians work out of our Olympia, Spokane and satellite offices. Operating similar to a consulting firm, the WSU Energy Program is a self-supported department within the University.

## Within WSU

As a part of the College of Agricultural, Human and Natural Resource Sciences, we report directly to the Dean of the College.

## Contact

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## Software innovations and information management at the Washington State University Energy Program

*Deep history • Broad expertise • Professional innovation*

The software team at the **Washington State University (WSU) Energy Program** is renowned for its positive attitude and down-to-earth expertise. Our team members' entrepreneurial approach in designing software, databases and websites that promote energy solutions is especially valuable now, with energy-related issues a concern for nearly everyone.

### Software Design

These unique software applications help customers analyze energy systems. Several of these products are offered free of charge by the U.S. Department of Energy (U.S. DOE).

### MotorMaster+ and MotorMaster+ International

This free, online motor selection and management tool helps engineers identify the most efficient action for repairing or purchasing industrial motors. Driven by the domestic success of this application, the WSU Energy Program software team developed MotorMaster+ International, now available in six languages on four continents.



### AIRMaster+

This free, online software tool helps users analyze energy use and savings opportunities in industrial compressed air systems.

### Fuel Mix Disclosure

Utilities in Washington rely on this application to assist them with reporting the mix of fuels that they use to generate electricity. Utilities then share this information with their customers.

## **Commercial Auditing Program (CAP)**

This is a self-audit tool ideal for small-facility managers who need to assess energy use in restaurants, schools and offices. Based on information entered about the building's energy systems and operation, CAP performs data analysis and modeling, and provides site-specific energy conservation measures.

## **HEATMAP**

This tool performs a comprehensive simulation of existing and proposed district heating and cooling systems, including cogeneration and geo-thermal applications. The extensive technical, cost and air emission information produced by HEATMAP is used to evaluate potential projects.

## **RELCOST Financial**

This application is used to evaluate the financial viability of energy projects and factors key to project success, such as the minimum power sales or carbon offset price, the optimum mix of equity and capital to attract investors, or sensitivity to incentives.

## **Café Dairy**

Café Dairy combines data management and interactive cost-benefit queries and calculations on farm-based subjects including carbon/greenhouse gases, nutrients (especially nitrogen and phosphorus), energy use, water management and farm operations. The software also has a strong financial analysis component so that producers get the information they need to evaluate the costs and benefits of specific investments.

## **TimeKeeper/PayKeeper**

Our software team developed this suite of administrative tools that is used by the WSU Energy Program. These tools, which can be custom built for other organizations, are currently being customized for the WSU College of Agricultural, Human and Natural Resource Sciences.

## **Database Development**

Our software team creates database systems so input can be analyzed quickly and accurately to support fact-based decisions. As projects evolve, different types of input are gathered and additional output is required by stakeholders. In this dynamic environment, our software team adds new functionality to ensure that the databases work hard for our customers.

*A few of the robust databases created by our team:*

### **EERE Clearinghouse**

The database created to support the U.S. DOE Energy Efficiency and Renewable Energy (EERE) Clearinghouse was used to collect, analyze and report data about the effectiveness of energy efficiency measures in industry. As new energy efficiency programs were established by U.S. DOE, the team developed new functionality and integrated it into the existing system.

### **Recovery Act Clearinghouse**

This database was designed to provide advanced program support and keep track of reporting requirements for recipients of federal American Recovery and Reinvestment Act (ARRA) funds in all 50 states and U.S. territories.

### **Conservation Services Group (CSG)**

CSG collects information about the energy efficiency measures installed in homes. This information, along with energy consumption data from energy service providers, is entered into the database to evaluate how effective these measures are in reducing residential energy use. The analytical output is then delivered to U.S. DOE to inform energy efficiency policies and incentives.

## **Website Development**

In addition to developing and maintaining the WSU Energy Program website, our software team creates and hosts websites to share technical research and expert analysis.

*A sample of websites that are helping our customers reach energy solutions:*

### **Northwest Clean Energy Application Center (NW CEAC)**

Our software team developed and maintains this website for U.S. DOE as part of the WSU Energy Program's leadership role in the NW CEAC. This effort strives to educate, support and promote industrial energy efficiency technologies including combined heat and power, district energy, and waste heat recovery systems. One of eight regional centers across the U.S., the NW CEAC operates in partnership with the U.S. DOE Industrial Technologies Program and Office of Electricity to provide training, technical assistance, and guidance on policy issues and legislation that support broader installation of these technologies. Details about this effort are available at <http://chpcenternw.org/>.

### **E3TNW**

As part of the Bonneville Power Administration's energy efficiency emerging technologies (E3T) initiative, the WSU Energy Program is working to identify, analyze and demonstrate emerging energy efficiency technologies for adoption by Northwest utility conservation programs. This extensive body of research is documented at [www.E3TNW.org](http://www.E3TNW.org).

### **Energy Experts**

The WSU Energy Program provides technical assistance to utility staff and commercial and industrial customers of the Western Area Power Administration in 15 states. These training and technical assistance materials, including various calculators developed by our software team, are available at [www.energyexperts.org](http://www.energyexperts.org).