

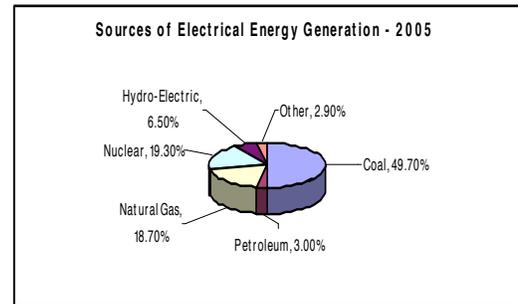
IV. Operations

The operations section of the plan contains eleven sub-sections covering a wide range of activities.

Long Term Vision: UW Oshkosh will conduct all aspects of campus operations in a fashion that is ecologically sound, socially just, and economically viable. The campus will assume a leadership role in the effort to create a truly sustainable campus with the goal to have a net zero impact upon the climate and environment.

A. Electrical Energy Management and Conservation

1. Introduction: One aspect of life in the developed world is a reliance on electrical energy characterized by extremely high levels of electricity energy consumption, as compared to developing countries. The majority of electrical power generated in the United States (and Wisconsin) is from burning fossil fuels, such as coal, natural gas and oil, to create electrical energy. The bi-products of the combustion process are indisputably linked to the growing problems of air pollution and global climate change. Another major fraction of electricity is generated by nuclear power plants, with growing, unmet needs for proper disposal of nuclear wastes. While a shift to sustainable sources of energy will eventually mitigate some of these problems, immediate efforts can also be taken to reduce the consumption of electricity on campus.



Sources of Electricity in U.S

2. Goal: To become a national role model for electricity conservation through the rigorous implementation of emerging technology to increase efficiency, and the application of policy-based conservation practices to reduce waste. Our goal is to reduce overall electrical consumption 20% from 2005 levels by 2012.

3. History: UW Oshkosh has a significant record of achievement related to electricity conservation.

a. Wisconsin Energy Initiative (WEI) – UW Oshkosh participated in a statewide energy efficiency program called the Wisconsin Energy Initiative (WEI). The program teamed state agencies with energy companies and involved the performance of a series of energy efficiency retrofits to existing facilities. (See Appendix D for details)

b. Other renovations projects funded through the state All Agency program have contributed to energy conservation:

- (1) Replacement of old, inefficient building chiller systems with a central chilled water plant in 2001 and 2006. This plant serves the major core of the campus.
- (2) Replacement of the old inefficient chiller system serving the main dining facility, Blackhawk Commons, in 2006.

c. Energy Management Practices: The facilities management department has aggressively managed the energy consumption within existing facilities by:

- (1) Utilizing the computer energy management system to schedule the heating and cooling of facilities based on occupancy and use. This is particularly important on weekends, evenings and during summer school.
- (2) Programmed thermostats to provide temperatures of 69 degrees in the winter and 74 degrees in the summer.

d. Awards and Recognition: The University of Wisconsin Oshkosh received an EPA Energy Star award in 2005 for devising a method to place computers into a sleep mode when not in use.

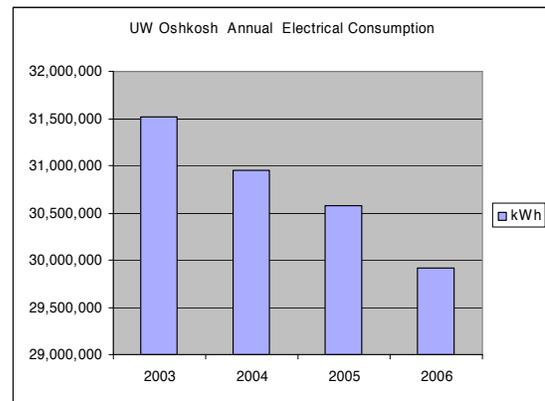


4. Results.

From 2003 to 2006, UW Oshkosh has reduced its annual electrical consumption from 31.5 million kWh to 29.9 million kWh, which equates to a **5%** drop during that time period.

By reducing electrical consumption by this amount, the following emissions are avoided on an annual basis over as compared to emissions in 2003:

Carbon Dioxide: 1,200 tons
 Sulfur Dioxide: 10 tons
 Nitrous Oxide: 4 tons



5. Recent State Government Initiatives

Wisconsin Executive Order 145, April 11, 2006, directs state agencies to:

- a. meet electricity efficiency (per square foot) goals of a 10% reduction from FY05 energy consumption levels by FY08, 15% reduction by FY09, and 20% reduction by FY10.
- b. establish programs for energy analysis of state owned buildings and identify reduced energy use.
- c. permit performance contracting for energy and operational cost savings.
- d. ensure that new state facilities are constructed to be 30% more energy efficient than commercial code.

As a result of this executive order, UW Oshkosh is currently working with three other state campuses (UW Stevens Point, UW Green Bay, and UW River Falls) and officials from the Department of Administration to develop a Request for Proposals (RFP) for Energy Conservation Services and Guaranteed Energy Savings Projects. The goal of this effort is to retain an Energy Services Company (ECO) at each campus that will perform an energy audit and then implement energy savings projects. The recommendations in this plan will be shared with the audit team for inclusion in the report findings.

6. Action Plan

The 20% energy reduction mandate contained in Executive Order 145 provides the rationale, support and justification for the specific action plan goals contained in this section. This

action plan is divided into three sections based upon priority. (See Appendix E for details and justification for these proposals)

Initial Consideration (First Year):

- *Review, verify and update campus audit data. Identify the campus facilities with the highest electrical energy consumption per square foot.*
- *Provide facility electrical usage feedback and education to campus users.*
- *Turn off unnecessary lights during non teaching periods.*
- *During low usage periods (summer, interim, weekend) consolidate classroom useage to the most energy efficient buildings that meet course requirements.*
- *Replace all incandescent exit signs with LED signs.*

Within Three Years

- *Phase in the replacement of old, energy in-efficient equipment with Energy Star rated items. Require all new purchases of certain high energy consuming devices (i.e. refrigerators) to be Energy Star Rated.*
- *Establish guidelines for the connected (plug) load in all campus facilities.*
- *Permanently reduce light levels in hallways/corridors of all academic buildings by as much as 20%.*

Future Consideration (Five years or greater):

- *Convert pneumatic control systems to direct digital control (DDC).*
- *Convert or replace energy inefficient facility HVAC systems.*
- *Initiate studies of more efficient lighting options (e.g. LED) to estimate when retrofitting will be feasible.*
- *Determine the viability of installing a Thermal Ice Storage Facility.*
- *Install green roofing to reduce summer heat loading during renovations of existing buildings and as part of new construction.*