Cutting back: Colleges discover conservation pays

By MATTHEW RUDY
The State News, Michigan State U.

Several years into the environmental revolution, university administrators are discovering that water and electricity conservation can save a lot more than energy.

The U. of California, Berkeley, saved more than $1 millionlast year in energy costs. Electricity consumption was reduced 5.4 percent, water 11.3 percent and fuel 7.7 precent.

Berkeley joined with other California schools in overhauling and improving campus energy and water systems to improve the bottom line.

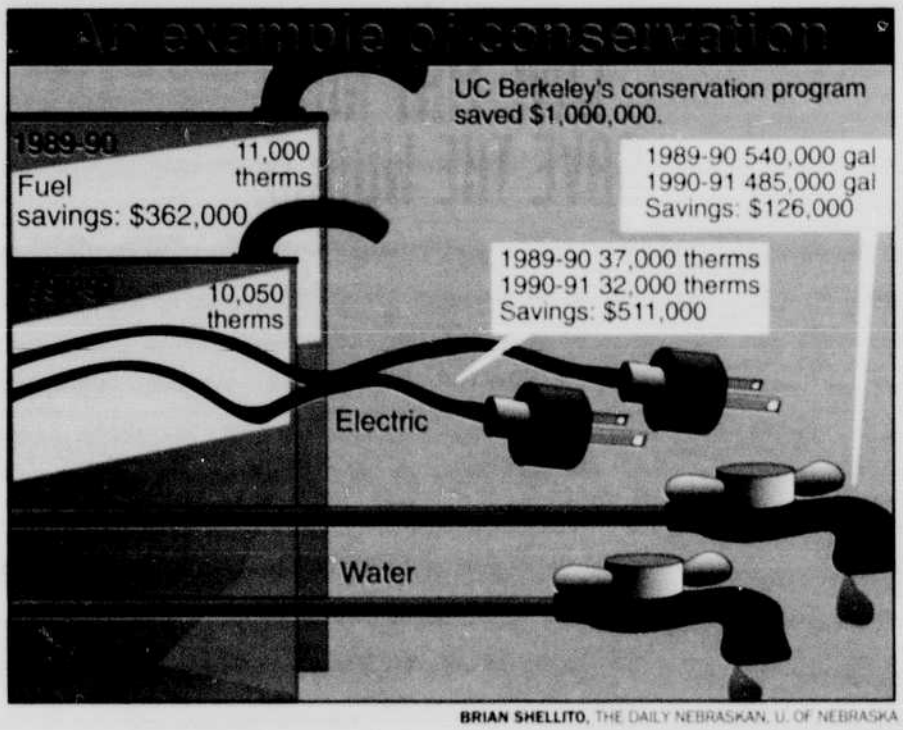
Nadesan Permaul, Berkeley's executive assistant for physical resources, said the university "borrows" electricity from a co-generation power plant owned by a private company.

"We recycle our power use," Permaul said. "The plant sits on a river running through the campus. A company distributes the power to the surrounding community, then sells the excess to us at a considerable discount."

Permaul said Berkeley also has embarked on one of the most stringent water conservation programs in the nation, partially because of a five-year drought. In the campuswide program, students, faculty and staff are informed of water conservation measures and yearly goals. Monthly bulletins outline progress toward those goals.

Berkeley also shut down all decorative pools and fountains and made water systems maintenance a priority.

Berkeley isn't alone in its conservation efforts. Washington State U. also is working to reduce water usage.



BRIAN SHELLITO, THE DAILY NEBRASKAN, U. OF NEBRASKA

"We have a rigorous conservation campaign," said Joe Spoonemore, director of the WSU power plant. "We share a common aquifer with the U. of Idaho, and we've pledged to limit withdrawal from that aquifer."

Replacing water condensing units with air-cooled units and a new, computerized central irrigation system have reduced WSU's water usage by almost 10 percent since 1976, Spoonemore said.

"If you can save water, you can also save energy," he added. "Since 1976, we've saved $30 million in energy costs."

Spoonemore said he hopes to stick to the 10-percent reduction even as WSU builds additional buildings on campus each year.

A new central control system similar to WSU's will control lights, heat and ventilation on Oregon State U.'s ever-expanding campus, said John Stephens, assistant director for engineering at OSU's Physical Plant. Any new structures at OSU will be built with state-of -the-art energy efficient systems.

The university also turned to recycled water and drip irrigation, a change from the "used once and down the drain" philosophy of the past, Stephens added.

Schools like Michigan State U. also burn coal in their power plants to utilize new energy sources.

Kerry Vachta, chairman of the Student Environmental Action Coalition, said MSU continues to use a form of coal dirtier and more expensive than coal used by nearby Lansing.

Vachta said MSU's coal site is on a list of the Michigan Department of Natural Resources' toxic sites.

"Power generation is a sensitive environmental issue these days," said Bob Ellerhorst, director of power and water at MSU. "There are two concepts – you can either burn it or stick it in the ground as nuclear waste."

"You'll never see anything but steam coming from our smokestacks," Ellerhorst added. "We burn coal to create both heat and electricity."

Michael Kamrin, a professor at MSU's institute for environmental toxicology, said many universities still burn coal or natural gas, and few have any environmentally benign options.

"The basic choice is burning fossil fuels or nuclear," Kamrin said. "In terms of solar or wind power, these methods are just not economical at this time."

Kamrin advocated what students across the country are stenciling on their protest signs and printing in their literature: reduce waste by reducing consumption.

Energy conservation isn't the top environmental priority for all schools. Texas A&M U. Power Plant Director Al Baxter said the university is dedicated to making some improvements in efficiency, but campus conservation efforts are focused elsewhere.

"I can say there is room for improvement, and we're dedicated to that improvement," Baxter said. "But I'd say there is more emphasis on campus on other environmental issues, recycling paper and wastes."

Back to school

Profs study climate, hazardous waste, spills and . . . penguins?

By S. KOMARNITSKY
The Daily, U. of Washington

Environmental research is a hot topic, and nowhere is it more prevalent than in the environmentally conscious West, where researchers are working on studies ranging from bio-diversity in national parks to the impact of oil spills on penguin populations.

Climate is Robert Charlson's specialty. A professor of atmospheric sciences at the U. of Washington, Charlson has been studying climate change since 1969. Most recently he's been looking at the impact of sulfur from natural and industrial sources on global warming.

The sulfur particles are actually helping to counter the global warming trend, he said, by reflecting sunlight back into space. However, Charlson cautions this should not ease concern about global warming since the same fossil fuels that emit sulfur also release carbon dioxide, which facilitates the global warming trend.

Charlson's research on this subject is far from complete. It's a continual learning process, he said, and much more research will have to be done before it's fully understood.

"It's not like we're designing a car that is going out on the production line," he said. "We finish pieces of it, then we make a new application for more research."

A more hazardous research project is being conducted by faculty and graduate students at Washington State U. who are examining the problems associated with disposal of hazardous waste.

The issue is of particular concern because of the nearby Hanford Nuclear Reservation, which dumped tons of nuclear waste into the surrounding area during 40 years of plutonium production. Some fear the waste may migrate through groundwater systems into the nearby Columbia River.

How well national parks are supporting bio-diversity is the subject of a study being conducted by Jim Quinn, an associate professor of environmental studies at the U. of California, Davis.

Quinn's research may help answer a question that has been batted around in academic as well as political circles for years – whether it is better to have a single large park or several smaller ones. The common belief, he said, is that larger parks encourage a greater diversity of animals.

"We're pretty much starting from scratch on this subject," he added.

For part of his research, Quinn analyzed part of a grassland near the university by dividing it into different-sized plots. The smaller parks actually supported twice as many species of plants and animals, Quinn discovered.

Dee Boersma, a professor at the U. of Washington's Institute of Environmental Studies, is looking into a more cuddly topic – penguins. Boersma is collecting data on the Magallenic penguins off the coast of Argentina.

PHOTO COURTESY OF DEE BOERSMA

All dressed up and no place to go.

Boersma began studying the population in 1982 when a proposal for the Japanese to harvest the penguins was being considered. Boersma's research on the population helped persuade the government not to allow the harvesting of the approximately 225,000 breeding pairs which attract over 40,000 visitors a year.

More recently, Boersma has been looking into how frequent oil spills in the area affect the population. Basically, she said, there is little hope once the birds have been oiled.

"You can't mitigate oil spills," she said. "You can prevent them."