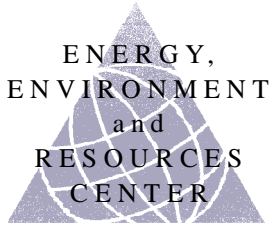


HIGHLIGHTS and INITIATIVES



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The EERC conducts unbiased, analytical, and multidisciplinary research designed to promote real-world solutions to problems in the fields of energy, environment, technology, and economic development.

COLLABORATIONS Since 1997, the Saturn-UT land use team has enhanced native vegetation and wildlife diversity, improved water quality and aesthetics, and reduced maintenance costs at Saturn Corporation's 2,500-acre site in Spring Hill, Tennessee. EERC Research Scientist **Jack Ranney** serves as project leader, and Research Associate **Karen L. Smith** serves as project coordinator. Other team members include **Jerome Grant** and **Reid Gerhardt**, professors in UT's **Department of Entomology and Plant Pathology**, and **William Park**, professor in the **Department of Agricultural Economics and Rural Sociology**. The Saturn-UT Land Use Project now displays project descriptions, native plants, exotic species, and more on EERC's Web site. You can access these pages, designed by **Smith**, at <http://eerc.ra.utk.edu/slup/index.htm>. General Motors also highlights the project at <http://www.gm.com/company/gmability>; scroll down the page and click on "Biodiversity thrives around Saturn plant."

EERC has entered into a contract with the State Building Energy Management Program, Tennessee Department of Finance and Administration, for the conduct of energy audits at state facilities. EERC Research Associate **Jonathan Overly**, who is leading the effort, will be assisted by Executive Director **Jack Barkenbus**; **Richard Jendrucko**, professor in UT's **Mechanical and Aerospace Engineering and Engineering Science** department; and **Richard Kelso**, professor in UT's **School of Architecture**.

WORKSHOP The East Tennessee Chapter of the American Society for Public Administration (ASPA) presented a workshop, *California in Tennessee? The Impact of Utility Deregulation on Economic Development*, at UT's Conference Center Building in Knoxville. EERC Associate Coordinator **Gail Farris** organized ASPA's public service award luncheon, and Research Scientist **Jean Peretz** convened the workshop. The forum addressed current events in California and explored the impact of deregulation on economic development in Tennessee—a region historically known for abundant, inexpensive, and reliable electric power. At its annual awards luncheon following the forum, ASPA honored several public servants for outstanding contributions to education, city and county governments, and nonprofit organizations. **Jason Mitchell**, a student in UT's program for **Master of Public Administration** was named outstanding student.

PUBLICATIONS **Lori Kincaid**, associate director of EERC's Center for Clean Products and Clean Technology (CCPCT), along with CCPCT research associates **Maria Socolof**, **Jonathan Overly**, and **Rajive Dhingra**, and other researchers, coauthored "Life-cycle Environmental Impacts of CRT and LCD Desktop Monitors." The authors compared potential environmental impacts from the extraction of raw materials through manufacture, consumer use, and final disposition of the two monitor types and identified areas for product improvement. **Kincaid** presented the paper in May at the *IEEE International Symposium on Electronics and the Environment* in Denver, Colorado. The report was also published in the conference proceedings (Piscataway, NJ: Institute of Electrical and Electronics Engineers, May 2001).

Jack Geibig, a senior research associate with CCPCT, served as primary author for a major U.S. Environmental Protection Agency report, "Printed Wiring Board Surface Finishes: Cleaner Technologies Substitutes Assessment," December 2000. It is posted on the Web at <http://www.epa.gov/opptintr/dfe/pwb/ctsasurf/pwbpub.htm>. Other members of CCPCT also contributed to the report.

Money (and Energy) Laundering



Each *Highlights and Initiatives* page presents an in-depth look at one of EERC's projects or activities. This edition focuses on the *Boston Washer Study*, which found that Maytag's Neptune washer and dryer use far less energy, water, and detergent than do conventional machines.

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Money (and Energy) Laundering

A new washing machine will save consumers money, use less water and energy, and minimize environmental impacts.

● BY LISA BYERLEY GARY

Neptune, the new front-loading Maytag washer with the funny name, looks and sounds futuristic. Its rounded top, touch-screen keypad, and front-loading design make it stand out in an appliance aisle lined with more traditional white boxes.

But the Neptune, and other horizontal-axis machines like it, can save energy, water, and detergent, says David Durfee, a research associate with Systems Development Institute (SDI), an affiliate of the University of Tennessee's Energy, Environment and Resources Center.

As project manager of the Boston Washer Study, which tested the Neptune and a companion dryer in a 50-unit condominium complex, Durfee has the data to prove the set's benefits to users and the environment.

Although the laundry room may not be where you'd expect to find the next high-tech phenomenon, says Durfee, that's where households consume a significant amount of water and energy to heat it.

The researchers first tested existing washers and dryers in the Boston-area condos and examined residents' clothes-washing habits. Durfee's team compared these findings to data gathered after residents began using the new machines. Project participants, who received a free washer and dryer, were not asked to change their washing habits in any way but were required to fill out data sheets for each load.

"We found a 41-percent water savings

and a 50-percent energy savings for the washers alone, and a 22-percent energy savings for the dryers," Durfee says. "With average savings of 13 to 15 gallons of water per load, participants used less energy for heating water."

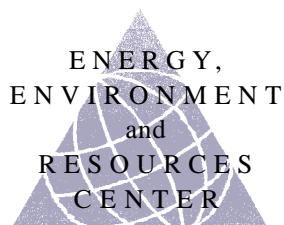
Because it uses less water, the Neptune also saves money on detergent, water, and energy while reducing environmental burdens associated with resource use. In addition, the back-and-forth rotating action of the washer drum (it doesn't use an agitator) prolongs garment life.

The Neptune washer uses a super-fast spin cycle to get clothes drier, which means the companion dryer has less work to do, too. And a moisture sensor causes the dryer to stop when the clothes are dry, which not only cuts down on wrinkles and shrinkage, but also saves energy. All in all, Durfee explains, a washer-dryer pair like the Neptune could save a typical family at least \$100 a year.

Since 1997, about a million of the new washers have been sold, representing only about 1 percent of all American washers. Even so, water saved by those consumers would fill a large arena like Thompson-Boling *some 50 times*.

Although a horizontal-axis machine costs more than an old-fashioned vertical unit, consumers can recoup their investment within a few years, Durfee says. "Imagine the impact," Durfee says, "if even 50 percent of American homes made that investment. It's good for the consumer, good for the environment, even good for cities because water treatment plants won't have to expand as fast. ●"

"Because it uses less water, the Neptune also saves money on detergent, water, and energy while reducing environmental burdens associated with resource use."



For more information contact David Durfee, SDI, The University of Tennessee, 2360 Cherahala Blvd., Knoxville, TN 37932, or call 865-946-1471.