

Sustainable Energy

*Clean, Safe Energy That's
Renewable and Efficient*

in Florida

**Did you know ...
that the price of
photovoltaic
electricity has
dropped
dramatically
from \$15 per
kilowatt-hour in
1975 to less
than 25¢ per
kilowatt-hour
today; the cost
of wind energy
has dropped
over 50%?**

**And...
that wind,
photovoltaic,
and solar
thermal sources
account for less
than one-tenth
of one percent
of Florida's
annual
electricity
generation?**

Jobs in Sustainable Energy

The U.S. Department of Energy's (DOE's) National Renewable Energy Laboratory (NREL) leads the nation in research and development and lab-scale demonstration of sustainable energy technologies. In FY 1997, a total of \$818,090 in research contracts, service subcontracts, and procurements was awarded to Florida organizations by NREL to develop renewable energy and energy efficiency technologies.

NREL's many programs help facilitate technology development with interested consumers and potential partners from industry, business, academia, and the global community. NREL's technologies, which are clean and green, include:

- Photovoltaics
- Wind
- Biofuels
- Biomass power
- Hydrogen
- Superconductivity
- Solar thermal
- Geothermal
- Hybrid vehicles
- Building energy systems
- Industrial applications of solar power.

DOE's Federal Energy Management Program (FEMP) activities could add over 400 jobs each year and save people in Florida \$23.2 million in annual energy costs.

Clean Energy = Clean Environment

The clean electricity generated from renewable energy sources in Florida from both utility and nonutility generators displaces about 640 tons of carbon dioxide per year (measured in carbon units) that would be emitted by coal-fired power plants.

Between March 1996 and March 1997, the U.S. Environmental Protection Agency's Green Lights and Energy Star programs helped save 600 million kilowatt-hours of energy in Florida. This saved consumers in the state at least \$40 million in energy bills and prevented more than 850 million pounds of carbon dioxide from entering the atmosphere. Projected savings through the year 2000 resulting from energy investments already made is \$160.6 million.

Economic Benefits

In FY 1996, DOE's Office of Energy Efficiency and Renewable Energy (EE) invested \$9.6 million in Florida. Florida's consumer energy cost savings from EE research and development products are estimated to be more than \$1.5 billion.¹

- Over three hundred businesses in Florida specialize in renewable energy-related products and services.
- State weatherization programs, aided by federal funding from DOE, helped at least 542 low-income and other disadvantaged Florida families last year.
- The Florida Solar Energy Center, which is nationally recognized for comprehensive programs in solar energy and energy efficiency, is working with EE to develop new membranes that will enable the operation of proton exchange membrane electrolyzers at higher temperatures, reducing energy inputs. This first-year cooperative agreement, funded at \$60,000 will lead to significant reductions in hydrogen production costs. In another cooperative agreement, EE provided \$100,000 to develop a process to produce hydrogen directly from water and sunlight. The center also tests photovoltaic system components as part of an EE program.

***Did you know...
that 43% of
Florida's
electricity is
generated from
coal, 12.9% from
natural gas,
23.6% from
petroleum, and
20.2% from
nuclear, while
0.3% is
generated from
other sources
including
hydroelectric?***

***And...
that Florida is a
net energy
importer,
meaning that
more electricity
comes into the
state than goes
out of the state?***

- With FEMP support, the U.S. Postal Service Processing and Distribution Center in Fort Lauderdale partnered with a local utility to replace inefficient equipment with new energy-conserving equipment and designs. The upgrades will save more than \$100,000 each year.
- Since May 1992, the Metro Dade Transit Agency has run five buses on methanol. The bus engines run on 100% methanol and were among the first methanol engines to become commercially available.
- EE awarded Solar Reactor Technologies (SRT), a small business in Miami, \$246,000 to commercialize a process for generating solar hydrogen combined with utility load leveling. SRT will develop a reversible hydrogen/halogen fuel cell that can be used in a hydrogen production/energy storage process, or used alone for energy storage on an industrial or utility scale.

Want More Information?

**Office of Energy Conservation
Consumer Hotline**
800-OEC-6662

**Energy Efficiency and Renewable
Energy Clearinghouse (EREC)**
800-363-3732
<http://www.eren.doe.gov>

**National Renewable Energy
Laboratory (NREL)**
800-644-NREL
<http://www.nrel.gov>

**Federal Energy Management
Program (FEMP)**
<http://www.eren.doe.gov/femp/>

**National Association of State
Energy Officials**
<http://www.naseo.org/>

**U.S. Environmental Protection Agency's
(EPA) Green Lights and Energy Star**
<http://www.epa.gov/energystar.html>

¹Based on a GAO review and validation of the energy savings of EE research and development success stories.

Questions?

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National Renewable Energy Laboratory

NREL is a national laboratory of the U.S. Department of Energy (DOE), managed for DOE by Midwest Research Institute

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