

**WATER HEATERS: GETTING THE MOST FOR YOUR MONEY**

# What gets hot, for less

FLORIDA  
TODAY

SERVING THE SPACE COAST

SATURDAY, FEBRUARY 21, 2009

75 CENTS



Rik Jesse, FLORIDA TODAY

**Getting hotter.** Senior research engineer Carlos Colon removes water from an integrated collector storage solar water heater to calibrate the system. The 40-gallon ICS system costs about \$3,500.

**FLORIDA SOLAR ENERGY CENTER.** The Legislature and Florida Energy Committee formed the center in 1974 during the energy crisis, in response to disreputable businesses bilking customers by making inflated claims about untested solar systems. The center, which rates solar systems, is the first state-supported energy organization.

Sleep well with lux sheets. LIFE, 1D



LIFE



**Brevard Idol is back for a fourth season**  
FLORIDA TODAY's annual singing contest is back, and if you think you've got what it takes, we'd like to hear you sing. This year's contest will be hosted at **Brevardmetromix.com**. Last year's winner, Ginnette Ward, is **above**. Get more on 1D

**Soldiers pray for each other in battle**  
As the chaplain at the Air Force Theater Hospital at Joint Base Balad, Iraq, "Spirituality" columnist Norris Burkes often asks wounded soldiers what they are praying for. Their answers contain some surprises. 1D

**WEATHER**  
**Sunny, highs near 67**  
Chance of rain 5 percent. Winds S-16 mph. Overnight lows near 56. 12A

**BUSINESS**  
**Civic leaders honored in 4 under 40 event**  
Four Brevard residents and a Merritt Island student are recognized Friday for being community leaders. The 4 under 40 event is a formal nod to the area's young and talented by an organization called LEAD Brevard. 10C

**FLORIDA**  
**Crist taps stimulus aid for balanced budget**  
Gov. Charlie Crist proposes a \$66.5 billion state budget Friday, leaning heavily on federal stimulus money to rescue Florida from tax increases and more cuts in state services. 8B



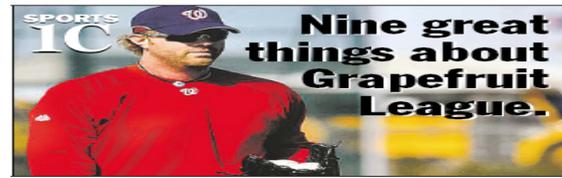
Former Melbourne Mayor John Buckley dies at 75. SPACE COAST, 1B

# FLORIDA TODAY

SERVING THE SPACE COAST

SATURDAY, FEBRUARY 21, 2009

75 CENTS



**Nine great things about Grapefruit League.**

# Plan can't please everyone

**Obama, FDR not perfectly matched for comparison**

BY TOM RAUM  
ASSOCIATED PRESS

WASHINGTON — In sheer size, the economic measures announced by President Barack Obama to address "a crisis unlike we've ever known" are remarkable, rivaling and in many cases dwarfing the New Deal programs that Franklin D. Roosevelt famously created to battle the Great

## ANALYSIS

Depression. Winning approval was a political tour-de-force for the new administration.

Yet gloom and uncertainty persist about the plan's ability to deliver a cure for the economy's severe ailments. Stocks plunged to six-year lows after the burst of bill signings, bailout announcements and presidential pledges. And polls show Americans increasingly are worried about losing jobs and not having enough money to pay their bills. Why the skepticism?

See PLAN, 5A



Looking back. President Barack Obama's stimulus plan was a political tour-de-force, the results of which dwarf some New Deal programs.

## WATER HEATERS: GETTING THE MOST FOR YOUR MONEY

# What gets hot, for less



Rik Jesse, FLORIDA TODAY

**Getting hotter.** Senior research engineer Carlos Colon removes water from an integrated collector storage solar water heater to calibrate the system. The 40-gallon ICS system costs about \$3,500.

## Testing 7 systems, researchers see more efficiency in solar

BY JIM WAYMER  
FLORIDA TODAY

COCOA — In a 16-by-10-foot shed, researchers at the Florida Solar Energy Center run seven types of water heaters to find the cheapest and most efficient one.

With a \$150,000 federal grant, they're comparing how well the heaters work in hopes of saving energy and homeowners' money. "We were trying to simulate a typical garage," said Subrato Chandra, project director for the energy center's Building America Industrialized Housing Partnership. "Our overall goal is research toward 'zero-energy' homes. The researchers began their yearlong experiment this year in the new Hot Water Systems Labo-

ratory at the center's Cocoa campus. The systems include conventional and tankless electric water heaters, as well as natural gas and three different solar systems.

The solar systems are leading the pack in efficiency. The first-place model used about 39 kilowatt hours between Feb. 1 and Feb. 15, compared with 152 kilowatt hours used by the conventional electric water heater.

Solar water heaters cost more initially — they can be \$4,000 — but owners can hit a break-even point in 12 years or less, said Carlos Colon, a senior research engineer and task leader on the project. "The payback could be as early as seven years," he said. Contact Waymer at 242-3663 or jwaymer@floridatoday.com.

**FLORIDA SOLAR ENERGY CENTER.** The Legislature and Florida Energy Committee formed the center in 1974 during the energy crisis, in response to disreputable businesses bilking customers by making inflated claims about untested solar systems. The center, which rates solar systems, is the first state-supported energy organization.

# Shuttle launch delayed again

BY JAMES DEAN  
FLORIDA TODAY

CAPE CANAVERAL — Shuttle Discovery's launch date remained uncertain after a marathon meeting Friday by senior NASA officials at Kennedy Space Center.

They could not agree to launch the year's first mission next Friday, as tentatively planned, and a mid-March or later time frame was under consideration.

Throughout the day, managers and engineers discussed ongoing concerns about a critical set of shuttle valves that have delayed the flight from its original Feb. 12 target date.

The three pop-up valves regulate the flow of hydrogen gas from each of the shuttle's main engines to its rust-colored, 15-story external tank. That allows the tank to maintain proper pressure as liquid hydrogen propellant is burned during the 8½-minute climb to orbit.

If pressure rises too high or sinks too low, or if a fragment from a broken valve punctures the gas line, the results could be catastrophic for the shuttle's seven astronauts.

The potential problem emerged during Endeavour's launch in November, when a small piece of a valve broke off. No harm was done, but engineers worried about how likely another failure was and how big a fragment could break off.

Weeks of tests ensued to study the consequences of one or more broken valves and to better understand the cause of the breakage. Managers Friday were deciding whether the risk was low enough to proceed with at least one flight while continuing to study the problem.

Seven astronauts are set to install the space station's final set of huge American solar array wings, completing its power supply. Contact Dean at 639-3644 or jdean@floridatoday.com.

## Studying efficiency

The Florida Solar Energy Center's staff has been testing types of water heaters to determine which are the most energy efficient and cost effective. Read more about the study's data on 3A





**FLORIDA SOLAR ENERGY CENTER**

---

*Creating Energy Independence Since 1975*

**Review of FSEC Activities:  
OPPAGA Review  
External Review  
Strategic Plan  
Federal Stimulus Package**

James Fenton

February 27, 2009

A Research Institute of the University of Central Florida





# Opportunities for FSEC

## Good News

20% RPS in Florida?, Solar Taking Off!

Large Increase in Demand for Solar and Building Efficiency Training

Large Increase in Demand for Solar Systems Certification

Substantial Funding Increases to DOE EERE should trickle down to FSEC

Funding to UCF's Florida Energy Systems Consortium Cut only 28%

Recruitment for 3 Endowed Chairs Continues

## Bad News

19% Decrease in E&G Budget July 2007 to July 2009 ????

Utility Bills went up 40%



# FSEC Review (OPPAGA)

Requested by Florida Legislative Office of Program Policy Analysis and Government Accountability on July 31, 2008.

Provided summary letter (Aug 14, 2008) to the 13 requests

Provided 52 Attachments

Received 4 page Draft Report February 13, 2009

*oppaga*

OFFICE OF PROGRAM POLICY ANALYSIS  
& GOVERNMENT ACCOUNTABILITY



February 2009

Report No. 09-xx

---

# Florida Solar Energy Center Conducts Research and Development; Legislature Could Direct Fee Increases and Drop Certification Requirement



# OPPAGA Questions

Question 1: What are the Florida Solar Energy Center's major activities?

Question 2: How well is the center performing in testing and certifying solar energy systems?



# FSEC's Major Activities (FY07-08)

	Expenditures (M)	% of total
<b>Research and Development</b>	<b>\$6.85</b> Alternate Fuels Buildings Solar Other	<b>49%</b> 22% 18% 6% 3%
<b>Technical Assistance</b>	<b>\$2.67</b> Alternate Fuels Buildings Solar Other	<b>19%</b> <1% 10% 8% <1%
<b>Education and Outreach</b>	<b>\$2.41</b> K-12 Professional Training Outreach	<b>17%</b> 2% 11% 4%
<b>Testing and Certification</b>	<b>\$0.73</b> Solar Thermal Photovoltaics	<b>5%</b> 5% 1%
<b>Support Activities</b>	<b>\$1.20</b> Facilities Support General Admin.	<b>9%</b> 4% 4%
<b>Total</b>	<b>\$13.87</b>	<b>100%</b>



# Solar Thermal

## Standards, Testing and Certification Program

- Third-Party Certification Required to Protect Consumers
- 2005 Energy Policy Act, 30% tax credit; substantial increase in manufacturers and distributors
- Florida RPS 20% renewables by 2020
- Only one US testing facility today (5 to 7 early days)
- Backlog for testing and certification up to 3 years (today) before 2005, kept up using one mobile test platform

### GOAL (Reduce Testing Time)

- Improved Data Acquisition
- Additional Test Stands
- Automated Reporting
- Provisional Collector Performance Ratings
- Increased fees \$3K to \$10K
- Private labs enter testing market



# External Review

## Recognized Strengths:

DOE Building America Program, DOE Southeast RES (PV), DOE Fuel Cell Membranes, DOE Center of Excel. H<sub>2</sub> Tech & Ed, DOE Solar H<sub>2</sub> Prod (SAIC/FSEC), NASA H<sub>2</sub> FL Universities.

Technical Programs (Buildings, PV, Hydrogen and Fuel Cells)

## Weaknesses:

Unbalanced R&D Portfolio (heavier on applied projects)

Distance UCF Campus

Lack of well articulated vision and roadmap

Perceived by UCF Faculty as a funding source

FSEC Culture, 70% Faculty Time Supported on Contracts vs. 25% Tenure-track faculty



# FSEC Strategic Plan January 2009

## Mission

FSEC's mission is to research and develop energy technologies that enhance Florida's and the nation's economy and environment and to educate the public, students and practitioners on the results of the research. Florida is one of the nation's most rapidly growing states, but has very limited fossil energy resources. As a result, the mission and activities of the Florida Solar Energy Center are a critical component of the future energy security and sustainability of Florida's economy and public welfare.

## Vision

Energy Independence for Florida



# FSEC's Five Strategic Goals

This plan comprises five strategic goals designed to achieve FSEC's core mission and move Florida toward energy independence. These five goals are:

- Goal 1 Improve and expand core research and development programs
- Goal 2 Enhance energy industry commercialization
- Goal 3 Expand energy education programs
- Goal 4 Enhance product testing and certification programs
- Goal 5 Expand communications and public outreach programs



# Federal Stimulus Package





# Stimulus Package

\$16.8 billion for the DOE Office of Energy Efficiency and Renewable Energy (EERE). The funding is a nearly tenfold increase for EERE, which received \$1.7 billion in fiscal year 2008.





# EERE Legislation (\$Mil)



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

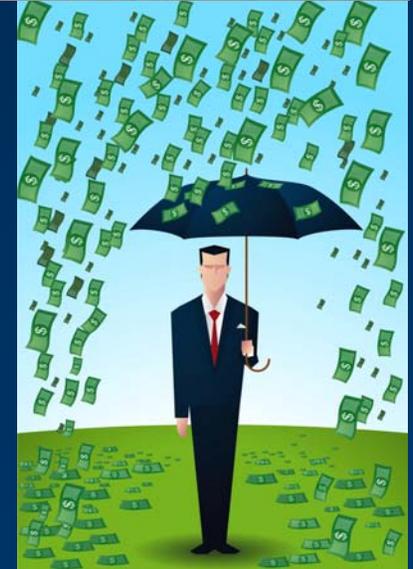
- ❖ **EERE RDD&D \$2,500** Biomass\$800  
Geothermal \$400 IT Improvements\$50  
Unspecified\$1,250
- ❖ **EE & Conservation Block Grants \$3,200**  
Formula\$2,800 Competitive\$400
- ❖ **Weatherization Asst Program \$5,000**
- ❖ **State Energy Program \$3,100**
- ❖ **Advanced Battery Manufacturing \$2,000**
- ❖ **Advanced Fueled Vehicles  
Pilot Grant Program \$300**
- ❖ **Transportation Electrification \$400**
- ❖ **Energy Efficient Appliances Rebates and  
EnergyStar \$300**
- ❖ **TOTAL EERE\$16,800**





# HUD

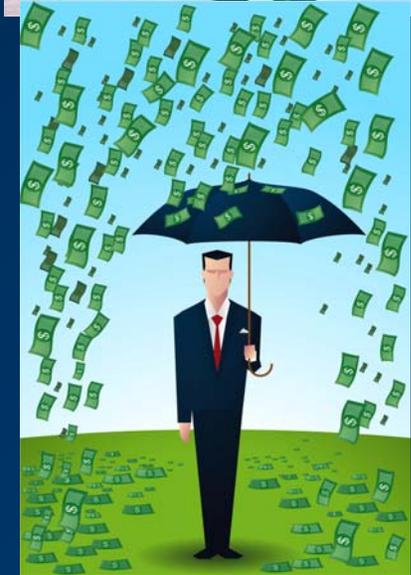
- ❖ \$4 billion to rehabilitate and retrofit public housing, including increasing the energy efficiency of units
- ❖ An additional \$510 million to do the same for homes maintained by Native American housing programs.
- ❖ HUD will receive an additional \$250 million to increase the energy efficiency of HUD-sponsored, low-income housing.





# Other Stimulus Funding

- ❖ 4.5 billion to the U.S. General Services Administration (**GSA**) to convert federal buildings into high-performance green buildings. The act also directs \$4 million toward the establishment of an Office of Federal High-Performance Green Buildings within the GSA.
- ❖ \$500 million to the **Department of Labor** to prepare workers for careers in energy efficiency and renewable energy.
- ❖ \$300 million to **fed agencies** to cover the costs of acquiring greener motor vehicles, including hybrids, electric vehicles, and plug-in hybrid vehicles, once they become commercially available.
- ❖ \$100 million for the Energy Conservation Investment Program within the **Department of Defense**.
- ❖ \$100 million for **U.S. Navy and Marine** projects.





# Renewable Tax and Grants

- ❖ The Department of Treasury is to provide grants equal to 30 percent of the cost of solar property placed in service during 2009 and 2010, in lieu of the section 48
- ❖ Repeals Penalty for Subsidized Renewable Energy Financing
- ❖ Renewable Energy Loan Guarantee Program including \$6 billion to pay credit subsidy costs.
- ❖ \$2.3 billion to fund 30% Renewable Energy Manufacturing Investment Credit
- ❖ Remove \$2000 cap on Solar Water Heating tax credit allowing full 30%

