

Recommendation 11:
Long-Term Enhancements to the Florida Energy Code

It is recommended that the Florida Legislature direct the Florida Building Commission to implement the following goals through the triennial code adoption process:

- *Include the necessary provisions in the 2010 edition of Florida Energy Efficiency Code for Building Construction (“Energy Code”) to increase the energy performance of new buildings by at least 20 percent from the 2007 Energy Code;*
- *Increase the energy efficiency requirements of the 2013 edition of the Energy Code by at least 30 percent as compared to the 2007 Energy Code;*
- *Increase the energy efficiency requirements of the 2016 edition of the Energy Code by at least 40 percent as compared to the 2007 Energy Code; and*
- *Increase the energy efficiency requirements of the 2019 edition of the Energy Code by at least 50 percent as compared to the 2007 Energy Code.*

It is further recommended that the Legislature direct the Florida Building Commission to identify within code support/compliance documentation and computer programs the specific building options and elements available to meet the enhanced energy efficiency goals identified above. Examples of potential building options/elements include:

- *solar hot water heating,*
- *energy efficient appliances,*
- *energy efficient windows, doors and skylights,*
- *low solar absorption roofs (“cool roofs”),*
- *enhanced ceiling and wall insulation,*
- *reduced leak duct systems,*
- *programmable thermostats, and*
- *energy efficient lighting systems.*

Finally, it is recommended that the Legislature direct the Florida Energy Commission to periodically review the energy efficiency goals established above. This review must be performed at least once every three years and must be completed prior to the triennial code adoption process.

BACKGROUND INFORMATION:

The Florida Energy Efficiency Code for Building Construction is a mature (established in 1979) building code with which designers, builders and code enforcement officials are familiar. The current Energy Code establishes standards for three key energy uses: cooling, heating, and hot water. Its efficiency standards track national engineering standards and model energy code as those standards advance over time, and incorporate additional Florida-specific provisions that have resulted in requirements more stringent than those in the national code. Florida’s proposed 2007 Code likely will result in new

homes that are about 4 percent more efficient than homes built to the standards of the 2006 International Energy Conservation Code.

Since its inception, the Energy Code has resulted in a 60 percent increase in residential efficiency. The result is that a 2007 house uses one third the amount of energy for space cooling and one quarter the amount of energy for space heating as a 1979 house of equal size. However, as home heating and cooling systems became more efficient, energy use due to “other” building components (appliances, lighting, etc.) has increased from 29 percent of total home energy use in 1979 to 53 percent today. Energy use for water heating essentially has remained unchanged.

Historically, the Energy Code has addressed only space-conditioning and water-heating use for residential buildings, leaving what now is the largest segment of residential energy use untouched. Including this segment in the Energy Code makes it possible to increase overall building efficiency to a level beyond today’s requirements. In coming years, that possibility will become more achievable because of new and emerging technologies and updated federal regulations for minimum heating, cooling and appliance efficiency levels.

Recommendation 12:
2007 Energy Code

It is recommended that the Florida Building Commission amend the 2007 Florida Energy Efficiency Code for Building Construction to significantly increase the energy performance of new buildings. Recommendations for necessary statutory revisions should be submitted to the Legislature by March 1, 2008.

BACKGROUND INFORMATION:

Florida law requires Energy Code components to be cost-effective to consumers. The cost/benefit study on residential buildings conducted in the 1980s, when the last major step in residential building efficiency requirements took place, has not been reevaluated since. The 2007 Legislature provided funding and direction for a new study to form the basis for setting new performance requirements. That economic analysis is underway. Options are available for near-term enhancement. Assuming energy cost increases and technology advancements align, the cost of higher performance standards will be justified.

In response to the Governor's Executive Order 07-127 (promulgated in July 2007), the Florida Building Commission has initiated efforts to revise the Building Code to increase efficiency by 15 percent. The target date for revising the energy code is January 1, 2009.

Necessary statutory changes should be submitted to the Legislature for consideration during the 2008 Session.

Recommendation 13:
Appliance and Lighting Energy Efficiency Standards

It is recommended that the Florida Building Commission increase the stringency of Florida's residential appliance efficiency and lighting standards. The Florida Building Commission should submit its recommendations for necessary statutory changes to the Legislature by March 1, 2008.

BACKGROUND INFORMATION:

Appliance efficiency standards have been an effective tool for improving energy efficiency. At the federal level, the U.S. Department of Energy (DOE) has been responsible for setting minimum appliance standards and test procedures for an array of residential and commercial appliances and equipment since 1987. As of 2000, federal appliance efficiency standards had reduced U.S. electricity use by 2.5 percent and carbon emissions by nearly 2 percent. By 2020, the benefits from existing standards are expected to more than triple as the stock of appliances and equipment is replaced by more efficient models. The appliance standards for 16 additional products included in the Energy Policy Act of 2005 (EPAAct 2005) are expected to yield an additional 2 percent savings in total electricity use.

State appliance efficiency standards establish minimum energy efficiency levels for appliances and other energy-consuming products. These standards typically prohibit selling less efficient models within a state. Many states are implementing appliance and equipment efficiency standards, where cost-effective, for products that are not already covered by the federal government. Presently, 12 states have adopted state appliance efficiency standards. Florida's existing appliance efficiency law only extends to three categories of appliances (refrigerators/freezers, lighting equipment, and showerheads).

In response to the Governor's Executive Order No. 07-127 (promulgated in July of 2007) the Building Commission has initiated rulemaking to enhance appliance-efficiency standards. The executive order specifies a 15 percent increase over current standards. The target date for revising the appliance efficiency rules is July 1, 2009.

Necessary statutory changes should be submitted to the Legislature for consideration during the 2008 Session.

Recommendation 14:
Integration of Building Energy Efficiency Programs

It is recommended that the Legislature direct the Florida Building Commission to evaluate how the Florida Energy Efficiency Code for Building Construction could be restructured to effect additional improvements to building efficiency in the future. Findings and recommendations should be made to the 2009 Legislature.

BACKGROUND INFORMATION:

Since the creation of the Energy Code in 1979, Florida also has established laws regulating appliance efficiencies and building energy-efficiency ratings. Originally separate policies were established to influence energy efficiency in buildings from different approaches. But the markets and regulatory environment have evolved to offer significant new opportunities for integrating these three approaches together into a potentially more effective whole.

The Energy Code and the building energy rating system use very similar computer programs, so trained private-sector service providers already exist. Where the current Energy Code is limited to space heating and cooling and water heating, the building energy rating system includes additional building components which could be influenced through building code minimum-performance requirements.

The building-code enforcement options also have evolved significantly. The law now allows Building Code plan reviews and inspections to be conducted by “private providers.” The building energy rating program certifies raters who evaluate building plans and conduct inspections, and could qualify private providers for energy code enforcement. This potential goes beyond code enforcement. Realizing the building component of energy efficiency especially depends on construction quality. Code enforcement jurisdictions do not evaluate construction quality. They only enforce minimum requirements established by the codes. Private inspectors can provide both quality assurance and minimum-code enforcement.

The energy code can include appliance and building component efficiencies that may be preempted by federal standards if adopted under authority of the Florida appliance efficiency law. The building code applies only to new construction, so its standards affect the market but do not establish absolute minimum requirements for all models of a product.

Recommendation 15:
Energy Efficiency Labeling for Buildings and Appliances

It is recommended that the Legislature strengthen policies set forth in the Thermal Efficiency Code (s. 553.900 F.S.), the Energy Conservation Standards Act (s. 553.951 F.S.) and the Florida Building Energy Efficiency Ratings Act (s. 553.990 F.S.) requiring labeling of new buildings and energy consuming products for energy efficiency.

BACKGROUND INFORMATION:

In order to effect energy conservation in the buildings sector minimum efficiency regulations must be coupled with robust market forces. Florida currently has three laws that address minimum efficiency requirements and energy-efficiency market enhancement. These three labeling programs can be strengthened to motivate consumers to adopt energy conservation measures.

The efficiency of building elements is addressed by the Thermal Efficiency Code. The efficiency of other energy-using elements in buildings is addressed by the appliance standards authorized by the Energy Conservation Standards Act. The Building Energy Efficiency Ratings law requires a uniform system of providing building-efficiency information to buyers. Each of these laws incorporates the concept of building and product labeling which is fundamental to consumers' ability to make conservation choices based on product performance. Adding label emphasis and improving coordination of label requirements could enhance the effectiveness of this market support policy.

Recommendation 16:
Integration of Renewable Energy Systems into Florida Building Code

It is recommended that the Florida Legislature amend the “Florida Building Codes Act” and the “Florida Thermal Efficiency Code” statute to require that the Florida Building Code and Florida Energy Efficiency Code for Building Construction facilitate and promote the use of cost-effective energy conserving, energy demand management and renewable energy technologies in buildings.

BACKGROUND INFORMATION:

Renewable energy and energy demand management technologies offer a strong potential to reduce energy consumption in the building sector, and to improve energy utility efficiencies. A regulatory environment conducive to market innovation is essential to realizing the benefits of this potential.

Building codes address existing technologies with well-established health and safety standards, and rely on code-enforcement jurisdiction personnel’s judgment to allow new technologies to be integrated into buildings before the extended process of product maturation has run its course. However, most jurisdictions are reluctant to allow using innovative technologies on their own, and prefer to rely on the recognition of codes-and-standards writing bodies.

Reducing regulatory barriers and providing an incentive to integrate energy management and conservation technologies into building construction requires establishing policies that prioritize administrative agencies’ direction of attention and resources to that goal. By directing the Florida Building Commission to specifically address including such products into the Building Code the state can expedite their use in the market.

Recommendation 17:
“Cool Roofs” and “Green Roofs”

It is recommended that the Florida Legislature direct the appropriate agency or entity to establish design and engineering specifications for energy-efficient roofs for homes and commercial building, that Florida building codes encourage the use of energy efficient roofs, and that the Florida Legislature prohibit any state or local zoning or building authority, or homeowners', cooperative or condominium association from preventing or restricting the use of these energy-efficient roof designs including white roofs, photovoltaic solar panels, solar hot water systems, rooftop gardens, rooftop, or shade trees that shelter roofs, with exception made for public safety concerns.

Background:

Traditional roofs usually are dark and, therefore, absorb more heat. They can reach temperatures of 150 to 190 degrees Fahrenheit. This contributes to increased energy use by air conditioners, higher utility bills, higher peak electricity demand, raised electricity production costs, grid overburdening, increased air pollution due to the “heat island” effects, accelerated roofing-material deterioration, increased roof-maintenance costs, and higher amounts of roofing waste sent to landfills.

Cool roofs reduce the roof surface temperature by up to 100 degrees Fahrenheit, and reduce the heat transferred into the building below. This reduces energy costs, improves occupant comfort, cuts maintenance costs, increases the life cycle of the roof, and reduces urban heat islands along with associated smog.

Initial material costs of “cool roofs” are comparable with traditional roofing materials - some cool products cost less than traditional materials, some cost up to 20 percent more. Cool protective coatings can be reapplied repeatedly every 10 to 15 years and reduce, if not eliminate, the need for expensive roof tear-offs. Combining these maintenance savings with an average 20 percent savings on air conditioning costs make cool roofing extremely cost-effective.

Recommendation 18:
Compact Fluorescent Light Bulb Disposal/Recycling Program

It is recommended that the Legislature direct the Department of Environmental Protection to develop a state-wide compact fluorescent light bulb disposal or recycling program.

BACKGROUND INFORMATION:

According to the U.S. Department of Energy, if every American home replaced just one incandescent light bulb with a compact fluorescent light bulb (CFL), the resulting savings could light more than 3 million homes for a year (equaling more than \$600 million in annual energy costs) and prevent greenhouse gases equivalent to the emissions of more than 800,000 cars.

CFLs contain a very small amount – an average of 5 milligrams – of mercury sealed within the glass tubing – about the amount that would cover the tip of a ballpoint pen. By comparison, older thermometers contain about 500 milligrams of mercury. Mercury currently is an essential component of CFLs, and is what allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact or in use.

The small amount of Mercury is a deterrent in the minds of some consumers to the use of CFLs. A number of parties have suggested that DEP can help overcome this perceived barrier to the use of CFLs by facilitating programs for disposing of or recycling CFLs.

Recommendation 19:
Use of Compact Fluorescent Light Bulbs in New Homes and Businesses

It is recommended that the Florida Legislature require, in a new house or business building on which construction is started on or after June 2009, the use of compact fluorescent light (CFL) bulbs in all appropriate light fixtures instead of using incandescent light bulbs.

BACKGROUND INFORMATION:

Research indicates that incandescent bulbs are one of the least efficient ways to light a home. Economical alternatives are readily available. CFL bulbs can last up to 13 times longer than incandescent bulbs, allowing a much longer time in between replacement. Though CFL's cost more to buy than incandescent bulbs, a CFL can save 8 to 12 times its cost during its life cycle and up to 2000 times its own weight in greenhouse gas emissions.

CFLs lighten the load for other appliances. Less than 10 percent of energy consumed by incandescent bulbs is used to create light – the rest, more than 90 percent, is wasted as heat. This makes the bulb hot to the touch and requires cooling systems to work harder.

There is some concern over the danger posed to public health and the environment by the 5 mg of mercury in each CFB – a small, but significant amount. Some states – New Hampshire, in particular – have addressed this by requiring retailers to accept used CFLs for proper disposal and by circulating public education materials on proper cleanup procedures in the event of a mercury spill. North Carolina's CFL initiative includes public education and information, workshops and events, including free bulb giveaways, and a partnership with Progress Energy, a utility company, to provide a \$1 discount on fluorescent bulbs at certain retail stores until the end of 2007 or until 200,000 bulbs have been sold.

Recommendation 20:

Assessment of an Energy Efficiency Resource Standard

It is recommended that the Legislature direct the Florida Energy Commission and Public Service Commission to review the potential benefits and costs associated with the creation of an Energy Efficiency Resource Standard (EERS). The Florida Energy Commission should report its findings and recommendations to the Legislature by December 31, 2008.

BACKGROUND INFORMATION:

An EERS (sometimes referred to as an “Energy Efficiency Portfolio Standard”) requires energy providers to meet quantitative targets (generally stated as a percentage of future load growth) for energy savings, typically in the electricity and natural gas sectors. This kind of policy instrument is similar to, and may be linked to, a renewable portfolio standard that requires utilities to generate a set portion of electricity from renewable energy resources. State public utility commissions or other regulatory bodies specify explicit numerical goals that regulated utilities and other entities engaged in energy efficiency program delivery are expected to meet on an annual and cumulative basis. An EERS may specify that implementation will involve coordination with a public benefit fund.

Presently, 14 states have energy efficiency standards or goals. Six states include energy efficiency in a renewable portfolio standard or goal. Overall, these EERS targets range from the equivalent of a 10 percent to 50 percent reduction in projected energy demand growth. Specific EERS designs vary by state. Some states, such as California, have established specific energy savings goals defined in terms of the amount of savings (e.g., expressed as MW, megawatt-hours [MWh], and/or therm savings) required over a specified time frame. Other states (e.g., Connecticut, Texas, and Illinois) require utilities to use energy efficiency to meet a specified percentage of total energy sales, or to forecast load growth over a certain time period.

Recommendation 21:
Review of Cost-Benefit Test for DSM Programs

It is recommended that the Legislature direct the Florida Energy Commission and the Public Service Commission to evaluate the current cost-effectiveness standard (the Rate Impact Measure Test) used to assess demand side management program and in doing so look at other tests that recognize the interactive effect of reduced energy demand from efficiency and conservation programs. The Florida Energy Commission should report its findings and recommendations to the Legislature by December 31, 2008.

BACKGROUND INFORMATION:

Regulators in other states use a variety of cost-effectiveness tests in assessing proposed demand-side management programs. This helps ensure the effective use of public funds and can be used to compare program and technology performance with the aim of developing effective future programs. Cost-effectiveness tests states commonly use include:

Participant Test -The Participant Test measures the quantifiable benefits and costs to the customer due to program participation. The benefits include: reduction in utility bills, incentives, federal, state, or local tax credits, and increased productivity and/or service. The primary costs include: equipment, installation, sales tax, ongoing operation and maintenance, and removal.

Program Administrator Cost (PAC) Test -The Program Administrator Cost Test measures the net costs of a demand-side management program as a resource option based on the costs incurred by the program administrator, including incentive costs and excluding any net costs incurred by the participant. The benefits are the savings from the avoided supply costs and include: generation cost savings (energy and capacity), transmission cost savings, and distribution cost savings. The only costs that are included are the administrative program costs and incentives paid to the participants.

Rate Impact Measure (RIM) Test - The Rate Impact Measure Test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. The benefits are the savings from the avoided supply costs and include: generation cost savings (energy and capacity), transmission cost savings, and distribution cost savings. The costs include: administrative program costs, incentives paid to the participants, and decreased revenues.

Total Resource Cost (TRC) Test - The Total Resource Cost Test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. Since the revenue (bill)

change and the incentive terms tend to cancel each other, the benefits include: federal, state, or local tax credits, increased productivity and/or service, generation (energy) cost savings, energy cost savings, transmission cost savings, and distribution cost savings. The costs include: administrative costs for incentive program, equipment, installation, sales tax, ongoing operation and maintenance, and removal. The TRC test is generally regarded as the most widely used cost-benefit test.

Review of national trends suggests that states are moving away from the single test model in general, and the RIM Test in particular. The primary criticism of the RIM Test is that it does not account for the interactive effect of reduced energy demand from efficiency investments on longer term rates and customer bills. Under the RIM test, any program that increases rates would not pass, even if total bills to customers are reduced.

Recommendation 22
Advanced Metering Systems and Pricing Strategies

It is recommended that the Legislature direct the Public Service Commission to develop regulatory policies that encourage the deployment of advanced metering systems and innovative pricing strategies.

BACKGROUND INFORMATION:

New programs around the nation are demonstrating that advanced metering systems (“smart meters”) can help both consumers and utilities. While time-of-use or interval meters have been used for a number of years, a new emerging class of electric and gas meters incorporate a mix of interactive technologies.

Together with pricing structures that reflect the cost differences of generating electricity at different times, smart meters enable customers to adjust their energy consumption patterns to save money. In addition to costs savings for consumers, these systems offer significant operational cost savings and related benefits for utilities, including: meter-reading automation; outage detection; remote connection/ disconnection; reduced energy theft; improved outage restoration; improved load research; reduced demand during times of system stress; decreased transmission and distribution system congestion; and reduced reliance on inefficient peaking generators.

Pricing strategies can take many forms including: (a) real-time pricing in which utility customer rates are not fixed, but reflect the varying costs that utilities themselves pay for power (which vary substantially during the day and over the seasons); (b) “time-of-use” rates which are fixed rates for different times of the day and/or for different seasons; (c) “increasing block” rates that rise as consumption increases; and (d) green pricing whereby customers are given the opportunity to purchase electricity with a renewable or cleaner mix than the standard supply mix offered by the utility.

Recommendation 23:
Annual Report by FEECA-Exempt Utilities

It is recommended that the Legislature require utilities that are exempt from the Florida Energy Efficiency and Conservation Act, but are subject to the Ten-Year Site Plan requirement, to submit an annual report to the Public Service Commission identifying energy efficiency and conservation goals and the actions taken to meet those goals.

BACKGROUND INFORMATION:

The Florida Energy Efficiency and Conservation Act (FEECA) was enacted in 1980 and was intended to reduce the peak-demand growth rates, and reduce and control electricity consumption growth rates. Under FEECA, the PSC was required to adopt conservation goals for applicable utilities. Similarly, the PSC was authorized to require utilities to develop plans and implement cost-effective programs for increasing energy efficiency and conservation within their respective service areas. Utilities are entitled to recover associated program costs.

FEECA was amended in 1989 to increase the threshold for subject utilities (greater than 500 gigawatt hours in annual sales). This revision reduced the number of subject utilities to 12, representing 94% of electricity sales. In 1996 FEECA was subsequently amended to increase the threshold to annual sales of 2,000 gigawatt hours or greater. Currently, the following utilities (representing roughly 86 percent of sales and 82 percent of customers) are subject to FEECA:

- Florida Power and Light
- Progress Energy Florida
- Tampa Electric Company
- Gulf Power
- Florida Public Utilities Company
- Jacksonville Energy Authority
- Orlando Utility Commission

A number of entities have argued that, due to Florida's forecasted growth in energy use, and the need to improve overall state energy conservation and efficiency efforts, all utilities, regardless of size, should be held to the same or similar standard. Smaller municipal utilities and electrical cooperatives oppose eliminating the FEECA exemption citing the disproportionate burden it would impose on small utilities.

Recommendation 24:
Energy Efficiency Requirements for State Buildings

It is recommended that the Florida Legislature require that all state government buildings be constructed in accordance with the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) program, the Green Building Initiative's Green Globes program, the Florida Green Building Coalition's standards, or any other nationally-recognized, green building system that is approved by the Department of Management Services.

BACKGROUND INFORMATION:

The Leadership in Energy and Environmental Design (LEED) program was developed by the United States Green Building Council (USGBC). The LEED program is intended to reduce energy consumption, reduce energy costs, provide for sustainable development, create water savings, and improve indoor environment quality. The LEED program uses a Green Building Rating system to evaluate buildings for their consideration of these factors, and then scores them to determine if they meet or exceed LEED conservation goals. Buildings that meet the minimum LEED standards are placed in one of four categories: "certified," "silver," "gold," and "platinum," with "platinum" being the highest building standard and "certified" being the lowest.

A number of other programs to promote creating green buildings also have been developed. These programs include the Florida Green Building Coalition and the Green Building Initiative's Green Globes program. Similar to the LEED program, the Florida Green Building Coalition, and the Green Globes programs use a checklist to rate buildings on their efficiency levels. Also, much like the LEED program, the Florida Green Building Coalition evaluates buildings in a variety of "resource efficiency" categories, including energy, water, lot choice/site, health, materials, disaster mitigation, and other general measures.

HB 7123 (2007 Legislative Session) included a provision requiring that all new buildings constructed and financed by the state must be designed to certain energy efficiency and sustainability standards. HB 7123 ultimately was vetoed by the Governor.

The Governor's Executive Order 07-126 directs the Department of Management Services to adopt the USGBC's Leadership in Energy and Environmental Design for New Construction (LEED-NC) standards for all new buildings. The Department is directed to strive for Platinum Level certification, the highest possible certification, for any new building constructed for or by the State of Florida.

Recommendation 25:
Green Schools Initiative

It is recommended that the Florida Legislature direct the Department of Education in conjunction with the appropriate local school authorities and the State University System to develop a “Green Schools” initiative that incorporates energy and resource efficient designs into new educational buildings. Such buildings should be built in compliance with the Leadership in Energy and Environmental Design (LEED) Rating System, the Green Building Initiative’s Green Globes System, the Florida Green Building Coalition standards, or any other appropriate nationally recognized and verifiable standard.

BACKGROUND INFORMATION:

A number of jurisdictions are focusing on opportunities to design and build new educational facilities that improve the learning environment while saving energy, resources, and money. High performance or “green” schools achieve these goals by using a whole-building, integrated-design strategy that incorporates the best of today's ideas and technologies. From the beginning of the design process, each building element (windows, walls, building materials, air-conditioning, landscaping, etc.) is considered part of an integrated system of interacting components. Choices in one area often affect other building systems; integrated design leverages these interactions to maximize the building’s overall performance.

Proponents maintain that the benefits of green or high-performance schools include higher test scores, increased average daily attendance, lower operational costs, improved teacher satisfaction and retention, decreased liability, and reduced environmental impacts.

In 2007, the U.S. Green Building Council is scheduled to release their LEED for Schools program. To qualify for the LEED for Schools designation, individual buildings must meet specifications for land use, water and energy efficiency, construction materials, and indoor air quality. LEED serves as a design guideline for green buildings and offers third-party validation of a building’s green features.

The 2007 Florida Legislature supported adopting LEED standards for constructing new state-owned buildings, renovating existing state-owned buildings, and enhancing state-building energy efficiency.

Recommendation 26:
Use of Guaranteed Energy Performance Savings Contracts

It is recommended that the Florida Legislature amend the statutory provisions relating to the use of Guaranteed Energy Performance Savings Contracts to encourage state agencies to invest in energy conservation measures to reduce energy consumption and maximize energy-related savings.

BACKGROUND INFORMATION:

Under the Guaranteed Energy Performance Savings Contract Act (GEPSCA), the state and other public entities may contract with an Energy Service Company for energy conservation measures. These energy conservation measures must produce a utility savings sufficient to cover the cost of financing, completing, and maintaining the contract. To accomplish this, the contractor guarantees that the public entity will achieve a utility savings sufficient to finance the proposed energy conservation measures. If the utility savings are not sufficient to cover each individual financing payment, the contractor must pay for the shortfall. Before a state agency may enter into a contract, it generally submits the project to the Department of Management Services for technical review, and the Chief Financial Officer for financing approval.

While a number of other public entities, including local governments, have entered into these types of contracts, relatively few state agencies have elected to utilize this financing option. One reason appears to be continuing concerns relating to the financing terms and the substance of the contracts. Another concern relates to the fact that state agencies rarely use the state's line of credit under the state's Deferred Payment Commodity Contracts and Consolidated Financing of Deferred-Payment Purchases programs because these programs only allow for ten years of project financing instead of the twenty years authorized for GEPSCA contracts.

HB 7123 (2007 Legislative Session) included a provision requiring that agencies identify state-owned buildings suitable for GEPSCA. The bill also addressed a number of contracted concerns relative to GEPSCA that had been raised by the Chief Financial Officer. HB 7123 ultimately was vetoed by the Governor.

Recommendation 27:
Recycling

It is recommended that the Legislature adopt a long term goal for the reduction of solid waste by recycling efforts undertaken by state government. The goal shall be a reduction by 2020 of 75 percent of the solid waste that was disposed of by state government in 2007, not including any recycling efforts undertaken during that year. The Department of Environmental Protection (DEP) shall by 2010 develop a recycling program, in conjunction with the state judicial and legislative branches of government, designed to meet that goal.

It is also recommended that the Legislature adopt a long term goal for the reduction of municipal and county solid waste by recycling efforts undertaken by such local government. The goal shall be a reduction by 2020 of 75 percent of the amount of the solid waste that was disposed of in 2007, not including any recycling efforts undertaken. Each county shall provide to the DEP by 2010 a recycling program for that county, including municipalities, designed to meet that goal.

It is also recommended that the Legislature adopt a recycling grant program to aid local communities in establishing, operating, or providing public awareness for such recycling efforts. Counties and municipalities are encouraged to form inter-local agreements to pursue such recycling programs when applying for grants. The following factors shall be considered, among others, when selecting recipients for the recycling program grants:

- 1 . The benefits to energy conservation and the environment,*
- 2 . The availability of capacity at existing solid waste facilities, and*
- 3 . The level of commitment of local officials, and the level of volunteer and private sector interest in the program.*

To be eligible to receive a grant, local communities must commit to a 50 percent local match to the amount awarded by the State. Also, the local recycling project must be planned or underway and the education project must directly promote the use of that project.

Background Information:

Before the 1920s, 70 percent of U.S. cities ran programs to recycle certain materials. After World War II the rate fell. Because of concern, in part, for the environment recycling is again on the upswing. The nation's current rate for composting and recycling is approximately 33 percent. Florida's statewide recycling rate in 2000 was 28 percent.

Recycling is one of the most frequently identified options available to address climate change. Recycling helps to significantly lower carbon emissions associated with extracting virgin materials, manufacturing products and waste disposal. Last year on a national level the amount of energy saved from recycling aluminum and steel cans, plastic products, glass containers, newsprint, and corrugated packaging was equivalent to:

- The amount of electricity consumed by 17.8 million Americans in one year.
- 29 percent of nuclear electricity generation in the U.S. in one year.
- 7.9 percent of electricity generation from fossil fuels in the U.S. in one year.
- 11 percent of the energy produced by coal-fired power plants in the U.S.
- The energy supplied from 2.7 percent of imported barrels of crude oil into the U.S.
- The amount of gasoline used in almost 11 million passenger automobiles in one year.

In Florida, by recycling one ton of paper we save approximately 17 trees, 6,953 gallons of water, 463 gallons of oil, 3.06 cubic yards of land fill space, and 4,077 kilowatt hours of energy.

There are several state programs to encourage recycling. For example, the Innovative Recycling Grant Program administered by the DEP is aimed at funding technologies or processes that represent a novel application of an existing technology or process, or that overcome obstacles to recycling/waste reduction in new or innovative ways. On a more comprehensive basis, the 1988 Solid Waste Management Act revised nearly all aspects of the state's solid waste management programs. It required each county to initiate a recycling program with the goal of achieving a 30 percent municipal solid waste recycling rate by the end of 1994. Funding for both of these programs has been inconsistent.

Recommendation 28:
State Procurement of Alternative Fuel Motor Vehicles

It is recommended that the Florida Legislature direct the Department of Management Services to implement the following:

- *Conduct an inventory to determine the percentage of motor vehicles purchased or leased with state funds that are alternative fueled or hybrid motor vehicles; and*
- *Purchase or lease over the next 3 years only those vehicles with the greatest fuel efficiency in a given class.*

In implementing this provision the Department should exempt special purpose, law enforcement, and heavy duty vehicles.

BACKGROUND INFORMATION:

As part of “Lead by Example” initiatives, a number of states are adopting policies that require a state or local agency's fleets to contain a certain percentage of alternative fuel vehicles (AFVs). Recent examples of state-mandated fleet requirements include:

- Connecticut - Signed into law on June 29, 2007, Public Act No. 4 requires 50 percent of new state vehicles to be alternative fueled, hybrid or plug-in electric after 2008. All state vehicles purchased after 2012 must meet this requirement. The law also provides sales tax exemptions for high mileage per-gallon, low-emission vehicles.
- Tennessee - Signed into law on June 27, 2007, SB 123 requires 30 percent of motor vehicles purchased by the state during the fiscal year be energy efficient, i.e, be flex-fuel, alternative fuel, hybrid vehicles or have at least 25 mpg highway rating.
- Texas - Signed into law on June 15, 2007, HB 2293 requires that not less than 10 percent of state agency-purchased vehicles meet or exceed certain emission standards.

The Florida Department of Management Services’ Fleet Management administers acquiring, operating, maintaining, and disposing of the state's fleet of motor vehicles and watercraft. Florida’s fleet includes about 25,000 units, including automobiles and light, medium and heavy trucks, construction and industrial equipment, tractors and mowers, motorcycles, and small utility and all-terrain vehicles.

The Governor’s Executive Order 07-126, directs the Department of Management Services to, when procuring new vehicles for all state agencies and departments under the Governor’s direction, approve only vehicles with the greatest fuel efficiency in a given class as required for that vehicle to minimize greenhouse gas emissions. The Department is to consider any specific circumstances of law enforcement agencies in processing vehicle purchase and lease agreements.

Recommendation 29:
Energy-Efficient Products Sales Tax Holiday

It is recommended that the Florida Legislature establish a sales tax rebate program for energy efficient products which would be in effect year round. Additionally, the month of October would be designated "Energy Efficiency and Conservation Month," with the first full week of October being "Energy Efficiency and Conservation Awareness Week."

Should the year round sales tax rebate program not be approved, it is recommended that the Legislature designate one week in October as "Energy Efficient Products Sales Tax Holiday," during which sales tax may not be collected on new energy efficient products sold.

BACKGROUND INFORMATION:

The benefits of purchasing energy-efficient products are well documented. These products typically use 25 to 50 percent less energy, reduce energy costs without compromising quality or performance, reduce air pollution and carbon emissions by burning fewer fossil fuels, offer significant return on investment, and provide extended product life and decreased maintenance.

Pursuant to SB 888 enacted during the 2006 Legislation Session, the period from 12:01 a.m., October 5 through midnight October 11, 2006, was designated a sales tax holiday for new energy-efficient products sold during that period and having a selling price of \$1,500 or less. The exemption only applied to items purchased for personal use, and included products such as dishwashers, clothes washers, air conditioners, ceiling fans, incandescent or fluorescent light bulbs, dehumidifiers, programmable thermostats, or refrigerators that met certain criteria.

HB 7123 (2007 Legislative Session) included a provision reauthorizing the energy-efficient sales tax holiday. HB 7123 ultimately was vetoed by the Governor.

Recommendation 30:
Property Tax Exemption for Renewable Energy Source Device

It is recommended that the Florida Legislature reauthorize the property tax exemption for renewable energy source devices and revise the calculation of the property tax assessment for applicable properties.

BACKGROUND INFORMATION:

Section 3(d), Article VII, Florida Constitution, provides the following:

By general law and subject to conditions specified therein, there may be granted an ad valorem tax exemption to a renewable energy source device and to real property on which such device is installed and operated, to the value fixed by general law not to exceed the original cost of the device, and for the period of time fixed by general law not to exceed ten years.

In 1980, the Legislature authorized a property tax exemption for real property on which a renewable energy source device is installed and is being operated. However, the exemption expired after 10 years. Specifically, the exemption period authorized in statute was from January 1, 1980 through December 31, 1990. Therefore, if an exemption was granted in December 1990, the exemption terminated in December 2000. The law required that the exemption could be no more than the lesser of the following:

- The assessed value of the property less any other exemptions applicable under the chapter;
- The original cost of the device, including the installation costs, but excluding the cost of replacing previously existing property removed or improved in the course of the installation; or
- Eight percent of the assessed value of the property immediately following the installation.

The Florida Solar Energy Industries Association reports that the current options are cumbersome and that property owners who are adding solar energy systems are having their property taxes raised for those improvements. The Association noted that because of the expiration of the exemption, homeowners who have installed solar energy systems on their property have the unforeseen dilemma of a property tax liability that diminishes the savings generated by these systems and discourages buyers who are willing to make such an investment in a clean energy future.

HB 7123 (2007 Legislative Session) included a provision reauthorizing the property tax exemption. HB 7123 ultimately was vetoed by the Governor.

Recommendation 31:
Sales Tax Exemption for Low Rolling Resistance Tires

It is recommended that the Florida Legislature eliminate the sales tax on energy saving, low rolling resistance tires.

Background Information:

Under federal fuel-economy standards, automakers equip new vehicles with tires that have a lower rolling resistance, which leads to higher fuel efficiency. When replacing the original tires, consumers often purchase less efficient tires. Currently, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires. In addition, there is no current minimum standard for fuel efficiency that all replacement tires must meet.

In 2006, the National Research Council of the National Academy of Sciences conducted a study on the use of low rolling resistance in replacement tires. The study concluded that tires and their rolling resistance characteristics can have a meaningful effect on vehicle fuel economy and consumption. The study found that reducing the average rolling resistance of replacement tires by a magnitude of 10 percent is technically and economically feasible.

A 2003 study commissioned by the California Energy Commission found that about 300 million gallons of gasoline per year can be saved in that state with lower rolling resistance tires. A set of four low rolling resistance tires would cost consumers an estimated \$5 to \$12 more than conventional replacement tires. The efficient tires would reduce gasoline consumption by 1.5 to 4.5 percent, saving the typical driver \$50 to \$150 over the 50,000-mile life of the tires. Consumers would save more than \$470 million annually at current retail prices or approximately \$1.4 billion over the three-year lifetime of a typical set of replacement tires.

In October of 2003, California adopted the world's first fuel-efficient replacement tire law. Specifically, AB 844 requires the Commission to: (1) develop a consumer education program, (2) require that retailers provide labeling information to consumers at the point of sale, and (3) promulgate through a rule development process a minimum standard for the fuel efficiency of replacement tires sold.

To incentivize their use, Florida should create a sales tax exemption for low-rolling resistance tires. Additionally, the state should consider the creation of an efficient tire program similar to those under development in other states.

Recommendation 32:
Application Process for Solar Energy Incentives Program

It is recommended that the Florida Legislature revise the application process for the Solar Energy System Incentives Program to stimulate additional interest in photovoltaic systems.

BACKGROUND INFORMATION:

In 2006, the Legislature created a solar energy system rebate program to provide financial incentives for the purchase and installation of solar energy systems. Specifically, from July 1, 2006, through June 30, 2010, any state resident who purchases and installs a new solar energy system of 2 kilowatts or larger for a solar photovoltaic system; a solar energy system that provides at least 50 percent of a building's hot water consumption for a solar thermal system; or a solar thermal pool heater is eligible for a rebate on a portion of the purchase price of that system. Applications for rebates must be made within 90 days of the purchase.

The total amount of the rebates is limited each year by the total appropriation for that fiscal year. The 2006 Legislature appropriated \$2.5 million to fund the program. If funds are insufficient in a given year, rebate requests may be processed, and take priority, during the following fiscal year. The program provides the following incentives:

- A rebate of \$4 a watt is provided for the purchase and installation of a solar photovoltaic system of 2 kilowatts or larger on a home or business. The rebate is capped at \$20,000 for a residence and \$100,000 for a place of business, a publicly owned or operated facility, or a facility owned or operated by a private, not-for-profit organization.
- A rebate of \$500 per residence is provided for the purchase and installation of a solar thermal water heater. Businesses, publicly owned or operated facilities, or facilities owned or operated by private, not-for-profit organizations that have a commercial-sized system are to be paid \$15 per 1000 Btus produced, as verified through an approved metering device. The maximum allowable rebate is \$5,000.
- A rebate of \$100 is provided for the purchase and installation of a solar thermal pool heater.

Since its creation in 2006, the solar energy system rebate program has awarded more than 4,000 rebates. The vast majority of rebates have been for solar thermal water heating and solar thermal pool heating applications. Photovoltaic systems are considerably more costly and complex than solar thermal systems. Prospective purchasers of photovoltaic systems are often reluctant to invest resources into these systems without some certainty that rebate funding is available. To address this concern, a number of states have instituted a rebate reservation system that enables applicants to submit a pre-application that demonstrates the planned system will meet requirements. If the reviewing agency approves the pre-application, it notifies the applicant and reserves the rebate for a specified period of time.

HB 7123 (2007 Legislative Session) included a provision amending the application process to create a rebate reservation system. HB 7123 ultimately was vetoed by the Governor.

Recommendation 33:
Programs to Assist Low-Income Energy Consumers

It is recommended that the Florida Legislature direct the Department of Community Affairs to develop recommendations to increase the availability of assistance through Florida's Low-Income Home Energy Assistance Program and Weatherization Assistance Program.

BACKGROUND INFORMATION:

The Low-Income Home Energy Assistance Program (LIHEAP) provides grants to local governments and non-profit agencies to assist eligible low-income households in meeting home heating and cooling costs. The majority of the funds are used for utility payment assistance. There are three categories of assistance available: home energy assistance, crisis assistance, and weather-related or supply-shortage emergency assistance. To be eligible for the program, household income may not exceed 150 percent of the poverty guidelines. The household must provide proof, such as a utility bill, that they are responsible for all or part of the energy costs for the household.

The Weatherization Assistance Program annually provides grant funds to community action agencies, local governments, Indian tribes and non-profit agencies to provide specific program services for low-income families. In order to receive assistance through the program, the total household income may not be more than 50 percent above the national poverty level. Preference is given to owner-occupied homes, elderly or physically disabled residents, families with children under 12, and households with a high energy burden (repeated high utility bills). Types of assistance include repair or replacement of inefficient heating and cooling units, home improvements to minimize air infiltration (weather stripping, caulking, thresholds, etc.), window and door replacement, attic- and floor-insulation installation, and water-heater repair or replacement.

Both programs are managed through the Department of Community Affairs' Division of Housing and Community Development. Funding for these programs is provided entirely by federal agencies. For 2007-2008, funding totaled \$26.5 million for LIHEAP and \$5.3 million (including a \$3.6 million transfer from LIHEAP) for the Weatherization Assistance program. In comparison, 2007 LIHEAP funding for New York totaled \$250 million.

Requests for assistance through LIHEAP and the Weatherization Assistance program have increased significantly in recent years, far outpacing available assistance. Recognizing this concern, the Department of Community Affairs, along with low-income customer representatives, government, social-service agencies and energy providers, have established the Florida Energy Affordability Coalition. The Coalition will recommend policies, procedures and actions that support: customers' health, safety and well-being; maximizing available financial and energy conservation assistance; quality service to customers seeking assistance; educating customers to make informed decisions regarding energy use and conservation; and awareness of customers' other unmet needs.

Recommendation 34:
Incentives for Hybrid Trucks

It is recommended that the Florida Legislature, in order to encourage the expansion of hybrid vehicle technology in the trucking industry, provide incentives for the demonstration and evaluation this technology in medium and large vehicle applications. This incentive program should address the investment cost differential between hybrid and conventional vehicles, be available on a competitive basis for a finite period of time, and be administered, monitored, and evaluated by the Florida Energy Office.

BACKGROUND INFORMATION:

Hybrid technology is providing significant fuel savings and emissions reductions in passenger cars. At the same time, there are promising hybrid-truck pilot projects underway in the package-delivery truck and utility-truck markets. Initial fuel savings results in hybrid utility trucks range from 40 to 60 percent below that of conventional trucks.

Limited initial purchase incentives are needed to expand the demonstration of this technology into other types of trucks, and to provide enough added manufacturing volume to result in lower purchase costs. The incentive should be structured as a shared investment with the truck purchaser who would pay the cost of an equivalent standard truck plus a reasonable estimate of the hybrid fuel savings. The incentive program would provide the difference between that amount and the vehicle's total cost.

The incentives should be awarded on a competitive basis. Truck manufacturers anticipate that the added volume of hybrid-truck manufacturing prompted by such demonstration projects will gradually result in lower truck prices. Therefore, the program should be time-constrained (i.e. exist for a maximum period of 5 years).