

Recommendation 68:
State Consumer Education Program

It is recommended that the Legislature initiate and fund a statewide multimedia program of consumer education focusing on, but not limited to, the following:

- 1. The value of Energy Star homes, Florida Green Building Coalition green home programs and other beyond code programs.*
- 2. The value and use of Energy Star products, Home Energy Rating System Index scores and energy efficient mortgages.*
- 3. The importance of duct performance and the value of sealing and repair programs for existing homes.*
- 4. The value of proper Heating Ventilating and Air Conditioning (HVAC) unit charging for all homes.*

Background Information:

A number of states have established innovative consumer education and public awareness programs designed to increase awareness of energy efficient products, services and programs.

Flex Your Power is California's statewide energy efficiency marketing and outreach campaign. Initiated in 2001, *Flex Your Power* is a partnership of California's utilities, residents, businesses, institutions, government agencies and nonprofit organizations working to save energy. The campaign includes a comprehensive website, an electronic newsletter and blog, and educational materials. The campaign's primary funding comes from the Public Goods Charge as approved by the California Public Utilities Commission, as well as contributing partner organizations and companies.

As part of its *New York Energy Smart Program* the New York State Energy Research and Development Authority administers a number of programs geared toward making energy more affordable for all New Yorkers. Through education, home improvements and, training, and better access to services, this program helps New York residents better understand and manage their energy costs.

The *Texas Energy Partnership* is a partnership of the State Energy Conservation Office, the U.S. Department of Energy's Rebuild America Program and ENERGY STAR. The partnership was formed to help affected communities comply with the Texas Emissions Reduction Plan, which contains new energy-efficiency measures that are designed to decrease electric consumption while improving air quality.

Research has documented the tremendous energy savings available to Floridians through a range of existing energy efficiency products and services. Unfortunately, limited consumer awareness of these programs has resulted in minimal market penetration.

RECOMMENDATION 69:
Utility-Sponsored Consumer Education and Awareness Initiatives

It is recommended that the Legislature direct the Public Service Commission to encourage utilities to further develop comprehensive plans specific to their climate region to conduct public energy education and consumer awareness campaigns, above and beyond specific product and program marketing, to increase conservation and efficiency.

Background Information:

There is a need for broad-based education and awareness to enhance participation in utility conservation programs, enhance energy efficiency generally and help consumers make informed choices about energy use. This activity should be funded through the energy conservation cost recovery clause mechanism, with the recognition by the PSC that, because the immediate results of such energy education and consumer awareness efforts may be difficult to measure, the costs should be monitored by the PSC, but not subjected to traditional energy conservation program cost-effectiveness tests.

Currently, each utility over which the Commission has ratemaking authority is authorized to seek recovery of its costs for energy conservation programs. Advertising expense recovered through energy conservation cost recovery must be directly related to an approved conservation program. Similarly, PSC rules specify that such advertising not mention a competing energy source, and not be company image enhancing. When the advertisement makes a specific claim of potential energy savings or states appliance efficiency ratings or savings, all data sources and calculations used to substantiate these claims must be included in the filing.

Recommendation 70:
Public & Professional Education on Climate and Energy Science

It is recommended that the Florida Legislature direct the FEC to propose educational policy for voluntary programs to inform Floridians on scientific aspects of energy generation, energy use, energy conservation, climate change, and climate change adaptation. The FEO would be responsible for coordinating the implementation of this policy across the state's Boards of Education and various state and local government agencies. These programs would include a coordinated, long-term effort to increase public awareness of the causes and solutions to energy and climate issues. These topics would be included in the curriculum at all education levels (elementary schools, middle schools, high schools, community colleges, and universities), and would be mandatory in the certification of Florida's climate and energy-related professionals (e.g. architects, engineers, construction fields, transportation sector, & healthcare sector).

BACKGROUND INFORMATION:

Climate change has become an extremely prolific media topic. But the lack of message unity and the high amount of conflicting information has led to some degrees of public confusion and marginal campaign results. As the leader in the effort to protect Florida's future, environment and economy, State government is the logical "official voice" for a public education campaign on energy, and in particular, climate change.

An official State voice is needed to convey primary messages to several key audiences and sub-segments of those audiences: The General Public (younger generations, middle generations, older generations), Business & Industry (utilities, the design/build industry, contractors, builders, architects, engineers, health-care, transportation), State and community organizations (professional associations, service organizations), Government (policy makers, State agencies, State employees, school districts), and Academic (elementary, middle, high and university [related fields] levels).

A crucial aspect of this campaign's success will be ensuring it will be administered centrally, as opposed to being a split, inter-entity effort. This recommendation addresses this need.

Other states in the process of developing and implementing public education campaign plans include Arizona and New Mexico.

Recommendation 71:
Driver Education Curriculum

It is recommended that the Florida Legislature require that Florida driver education courses and driver license examinations include content on energy use topics such as vehicle choices, fuel choices, vehicle emissions, efficient driving practices, car maintenance, optimum tire insufflation, and vehicle idling.

Background Information:

Providing educational instruction to new drivers on the energy usage of motor vehicles is a simple and easy way to increase the energy efficiency of vehicles in Florida. Current text used by most drivers' education students provides very limited discussion of issues such as fuel efficiency and fuel-efficient driving practices. The current edition (10th edition) was published in 2003 and makes no mention of low-rolling-resistance tires. Another reference used in drivers' education courses is the Florida Drivers' Handbook. Based on the table of contents, no specific chapter or section is dedicated to fuel efficiency, automobile efficiency, fuel-economy driving practices or low-rolling-resistance tires. Making fuel economy a part of drivers' education courses could encourage students to adopt driving behaviors that save both gas and money.

The State Board of Education requires programs and courses funded through the Florida Education Finance Program and courses or programs for which students may earn credit toward high school graduation to be listed in the Course Code Directory (CCD). The State Board approves additions and changes to the CCD on an annual basis. Local school boards have an annual opportunity to identify new courses or changes to existing courses for which there is a need and submit them to the State Board for review, approval and inclusion in the CCD. County residents can use the form designated for additions and changes to initiate the process at the local level.

Recommendation 72:
Energy Workforce Training and Education

It is recommended that the Florida Legislature instruct the Board of Education to:

- 1. provide high-school guidance counselors with the basis to encourage appropriate students to pursue energy-industry careers and institute post-secondary level energy education curriculum and programs,*
- 2. develop programs to expedite direct secondary school relationships with the state's utilities in order to educate students about the energy industry, and*
- 3. provide energy-sector educational curricula to be taught during middle school grades.*

BACKGROUND INFORMATION

By 2020, Florida's population is projected to grow to 23.4 million. This equates to a 30 percent increase in electric customers. U.S. electric utilities expect 11 to 50 percent of their workforce to retire within the next five to ten years. Aging workforce is cited among the three top concerns of U.S. utilities. Three quarters of Florida's electric systems cite the accelerated pace of retirement as a major concern. Occupations of particular concern are power plant operators, linemen, electricians, plumbers, pipe fitters, steamfitters, and engineering technicians.

A well-trained and educated energy workforce is critical to Florida's future economic success. There are a number of initiatives underway, principally in the private sector, to increase the future worker pool. A public policy is needed to support efforts presently being carried out by the electrical industry and educational institutions. The need to ensure an adequate supply of energy workers in the future warrants a place in public policy. There is need for commitment of state funds and active participation by public-private partnerships to develop and act on workforce-development solutions.

Recommendation 73:

Community Colleges/Energy-Related Education

It is recommended that the Florida Legislature, in order for the public to have an opportunity to better understand energy issues and satisfy the increasing public desire to be involved as educated consumers in the decision process, direct the Florida Community College System to:

- 1) incorporate energy-related curriculum into life-long learning and continuing education offerings, and*
- 2) develop and promote an energy certificate/degree program.*

BACKGROUND INFORMATION

Few aspects of life impact citizens, business and society as much as energy. The production and use of energy has a critical effect on the environment, climate, public health, public policy, financial well being, and national security. Decisions made by every individual as well as by energy companies and governments contribute to the complex web of energy supply and demand, but few individuals or institutions understand or have studied the convergence of issues related to energy.

There is a need to offer consumer education programs to:

- increase consumer awareness of retail rates and options,
- provide a working knowledge of efficiency and energy conservation applications and techniques,
- present an understanding of the energy production cycle,
- facilitate informed consumer decision-making, and
- afford the consumer an objective and credible source of energy information.

In order to reach as many consumers as possible, these education programs should be undertaken by the community college system and offered as certificate/degree courses.

Recommendation 74:

State University System/Electric Power Institute

It is recommended that the Florida Legislature establish an Electric Power Institute within the State University System to address (at both undergraduate and graduate levels) the following:

- 1) training in emerging fuels and power technology and management, and*
- 2) provide for a scholarship program within the Institute funded by the state's electric utilities with matching funds provided by the State of Florida.*

BACKGROUND INFORMATION

The energy industry historically has been largely comprised of technology-based businesses. The advent of new technologies and processes, such as renewable generation and greenhouse gas capture and sequestration, coupled with the apparent re-emergence of nuclear generation is placing pressure on Florida utilities to increase the recruitment of well-trained engineering and managerial personnel.

There is a need to increase opportunities for potential utility engineers and managers to pursue a comprehensive education in utility systems and management without leaving the state. Such programs should provide education on current and emerging technologies essential to the future of the state's energy systems. Florida's higher education institutions should be encouraged to take the lead in providing such opportunities. Likewise, the state's utilities should be encouraged to provide meaningful employment for the graduates of these programs to reduce any out-migration of technical talent.

Recommendation 75:

Research and Development Programs for Renewable Energy

It is recommended that the Florida Legislature direct the Florida Department of Environmental Protection to submit a comprehensive research and development program for the exploitation of renewable energy in Florida. This would include support for activities at public and private institutions of higher learning and in private industry.

Background Information

The proposed program should establish a renewable energy research and development grant program focused on funding promising biomass, ocean, solar, and wind energy research activities with significant potential to provide energy and economic development in Florida. High priority should be given to technologies where federal funding opportunities are limited or non-existent. Funding should be considered for the following categories:

- 1) basic research to investigate and develop fundamental understanding of very promising, high payoff, long term, technologies that may provide the basis for substantial advances in renewable energy generation,
- 2) technology development and prototyping to investigate, develop, and demonstrate the feasibility and practicality of technologies that have advanced beyond basic research and have commercial potential, and
- 3) commercial scale demonstration to provide proof of technological feasibility, operability, and production capacity at relevant scales.

The Department of Environmental Protection is the appropriate state agency to recommend a broad based research and development strategy for renewable energy. Current Florida law makes that department the state clearinghouse for indexing and gathering all information related to energy programs in state universities, in private universities, in federal, state, and local government agencies, and in private industry.

Recommendation 76:

Education Funding to Increase Renewable Skills and Technologies

It is recommended that the Florida Legislature provide direction, authority, and funding to the Florida Board of Education and other appropriate agencies to:

- 1) develop and deploy educational programs to encourage and increase the availability of crafts and skills needed to design, manufacture, specify and install renewable technologies;*
- 2) promote curricula appropriate for primary, secondary and post-secondary education sectors on the subjects of the sources, uses and benefits of renewable energy, and the benefits of energy conservation and efficiency.*

Background Information:

A trained workforce will be critical for the development and deployment of renewable energy resources and technologies. The availability of skilled technicians and workers will attract new industries to the state and will promote economic development associated with the growth of the renewable energy industry. It is therefore recommended that workforce development in this area become a priority for education in Florida.

An informed populace is essential to the broad recognition and acceptance of the benefits of renewable energy, conservation and efficiency. Therefore, these subjects should become a part of the curricula at all levels of education. Moreover, people will be more likely to conserve energy and purchase energy-efficient products if they understand the positive financial and environmental consequences.

Implicit in this recommendation is the promotion of adult education and lifelong learning programs at the state's community colleges. It is essential that people of all ages have the opportunity to learn about these important issues.

Recommendation 77:
Research Summits

It is recommended that the Legislature direct the Florida Energy Commission and the Florida Energy Office to convene an annual energy research summit to provide a forum for the state's academic community to examine energy-related research initiatives and opportunities for cooperative/collaborative research.

Background Information:

With a number of world-renowned energy research institutes and rapidly expanding alternative energy research capabilities, Florida is poised to become a national leader in the research needed to meet the challenges of today's energy and environmental problems. By working together, the state's public and private research centers and institutes can generate the synergies that will propel the state into national prominence in this important and timely research arena.

While numerous state and private academic units have hosted energy research-themed conferences and events in recent years, there is presently no statewide forum where Florida's energy researchers can assemble to exchange findings and ideas. Additionally, directing the Florida Energy Commission and the Florida Energy Office to coordinate this summit would enable the research community to directly communicate their recommendations regarding the state's energy-related research programs and priorities to these policy development entities.

Recommendation 78:
Coordination of Florida's Energy-Related Research and Development

It is recommended that the Florida Legislature direct the Florida Energy Commission, in cooperation and coordination with the state university system and the independent colleges and universities, to develop a strategy for enhancing research in support of Florida energy policy with the goal of deploying related research and technology into the marketplace as soon as possible. Importantly, this recommendation is not intended to be detrimental to the state's important long-term research initiatives.

Background Information :

The discovery of new energy technologies, or improvements in existing technologies, could provide a major achievement in enhancing Florida's energy security or lowering the state's greenhouse gas emissions. That is why it is critical to develop a rapid deployment strategy for commercialization of new energy-related technologies and products.

A number of other states have taken steps to link energy-related research and economic development. For example, research funded in part through the California Energy Commission has led to the establishment of new alternative energy industries that contribute \$6 billion annually to California's economy and support 36,000 jobs in the state. In addition, the Commission's Energy Technologies Advancement Program generated \$6 in matching funds for every \$1 invested by the state, which has added approximately \$370 million in state gross product and \$10.3 million in state and local tax revenues. Similarly, the Commission's Transportation Energy Technologies Commercialization programs have provided \$25 million in program funding to attract over \$95 million in private funds to commercialize advanced transportation energy technologies.

This recommendation is intended as a companion to other recommendations that support the development of an economic development plan that targets renewable and alternative energy industries. Together, these recommendations are aimed at creating the research and business climate necessary for Florida to become a world leader in the energy field.

Recommendation 79:

Economic Development

It is recommended that the Florida Legislature direct the Florida Energy Commission to work in conjunction with Enterprise Florida to formulate an economic development strategy that targets renewable and alternative energy companies and creates the business environment in Florida necessary to make the state a major center for the development and expansion of energy-related companies.

Background Information:

Florida has created a number of programs to provide financial incentives for the production of renewable energy. For example, the 2006 Florida Energy Act established the Renewable Energy Technologies Grants Program to provide renewable energy matching grants for demonstration, commercialization, research and development projects relating to renewable energy technologies. The grant program is designed to stimulate capital investment in the state and promote and enhance the statewide utilization of renewable energy technologies. Similarly, the Solar Energy Systems Incentives Program provides rebates for purchase and installation of solar energy systems in homes and businesses.

Enterprise Florida is the state's public/private partnership responsible for assisting startup companies in the state and for recruiting existing businesses to Florida. Enterprise Florida was created to assume the economic development responsibilities of the now defunct Florida Department of Commerce and operates at the state and local levels. Enterprise Florida, which has considerable expertise in business assistance and job creation, currently recognizes alternative energy as one of the state's "emerging technologies."

Florida should build on its early successes in the field of renewable energy by developing a long-range economic development plan tailored to enhance energy-related research with the goal of deploying such research into the market place as soon as possible.

Recommendation 80:

State Interest

It is recommended that the Florida Legislature require, and be a condition for, all grants or other monetary awards to private business for energy related research or deployment projects, a negotiated or licensing agreement that after commercialization of the product or process, an amount or percentage of the profits as agreed to will be returned to the state.

Background Information:

It is vitally important for the state to continue its support of private energy research and deployment projects. Such collaboration between the public and private sector is essential if the potential of such efforts are to be realized.

However, such partnerships are always contingent on the availability of state revenues. Such reality was evident during a recent special session when over one billion dollars was cut from the state's budget. Even in times when the economy has been particularly robust, funds for energy-related research have been far less than needed. A certain exception was legislative action in 2007 when \$62 million in non-recurring general revenue was funded in the Budget and Implementing Bill.

To help combat this struggle for funding, it is appropriate that private sector success that was funded, in part, by the state help fund future research which, in turn, can provide additional benefits to the citizens of this state. The requirement of such agreements in this recommendation serves that purpose.