

Office of Energy

Annual Report

2013



Florida Department of Agriculture and Consumer Services
Adam H. Putnam, Commissioner



Dear Governor Scott, President Gaetz and Speaker Weatherford:

I am pleased to provide you with the 2013 Annual Report of the Florida Department of Agriculture and Consumer Services' (FDACS) Office of Energy.

The FDACS Office of Energy works with Florida's energy stakeholders, legislators and consumers, as well as other state agencies, to develop and implement the state's energy policy.

In February of 2013, FDACS launched the Florida Energy Clearinghouse to provide Floridians the information they need to be knowledgeable energy consumers and make smarter, more informed decisions about the energy choices they make every day. Through the online platform, users can compare energy saving technologies, learn more about renewable energy technologies, browse research being conducted at Florida's universities and learn more about energy usage and production.

In October, the department hosted the third Florida Energy Summit in Orlando. The summit brought together business leaders, utility companies, state and local elected officials, academics and environmentalists to discuss Florida's energy policy. We explored how Florida can create an environment that will nurture and foster new energy technologies and create jobs across the state.

At the Florida Energy Summit, I outlined my energy-related proposals for the Legislature to consider during session. I proposed to cut the tax businesses pay on electricity consumption in half, which will ultimately save Florida businesses nearly \$225 million per year. I recommended we shift the remaining revenue from that tax to support Florida's next generation with an investment in our education infrastructure. In addition, I proposed a tax holiday weekend for consumers to purchase energy efficient appliances.

I look forward to continue working with you to advance Florida's energy policy and support Florida's businesses, consumers and education infrastructure.

Sincerely,

A handwritten signature in black ink, appearing to read "Adam H. Putnam". The signature is fluid and cursive.

Adam H. Putnam
Commissioner

**FLORIDA DEPARTMENT OF AGRICULTURE
AND CONSUMER SERVICES**

OFFICE OF ENERGY

2013 ANNUAL REPORT

Adam H. Putnam, Commissioner

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1. Executive Summary

This is the third annual report to the Governor, the President of the Senate and the Speaker of the House of Representatives as submitted by the Florida Department of Agriculture and Consumer Services' (FDACS) Office of Energy (OOE). It reflects the FDACS OOE activities during 2013 and includes policy recommendations to prepare Florida to meet the growing demand for energy in a diverse and sustainable manner. This report is submitted as required in Section 377.703(2)(f), Florida Statutes.

In 2013, the FDACS OOE continued its commitment to the consumers of the state by launching the Florida Energy Clearinghouse. The Florida Energy Clearinghouse is a website that provides Floridians the information they need to be knowledgeable energy consumers and make smarter, more informed decisions about the energy choices they make every day. A major component of the clearinghouse is the "My Florida Home Energy" tool that identifies energy efficient products, services, and potential energy and monetary savings for a Florida homeowner based on information provided by the homeowner, as well as publicly accessible data. By educating Floridians on wise energy use, this tool has the potential to improve the quality of their life, both financially and environmentally.

In early 2013, the FDACS OOE awarded grants to 15 local governments for a total of \$3,110,760 to fund projects designed to reduce their total energy use through the installation of energy efficient lighting. All projects were completed in August of 2013, and Florida's local governments have begun realizing savings in their energy costs and usage. For example, grantee St. Lucie County has identified savings of \$13,500 per year because of this program.

In the 2012 Annual Energy Report, the FDACS OOE cautioned against Florida relying too heavily on any one source of fuel, such as natural gas. A major concern was Florida's reliance on two natural gas pipelines coming in from the Gulf Coast area, and the pipelines' potential disruption by a major hurricane or other natural or manmade disaster. Over the past year, the Florida Public Service Commission (PSC) approved Florida Power & Light Company's (FPL) contracts for a third natural gas pipeline that will enter Florida from Georgia through the center of the state. The new Sabal Trail transmission system will include 600 miles of pipeline that will bring in more natural gas, increasing Florida's natural gas capacity by twenty percent, and decreasing Florida's vulnerability to natural or manmade disasters.

The FDACS OOE continues to advocate an "all of the above" approach regarding energy fuel and technology sources. One of the best ways to ensure Florida selects good energy sources is to support the research and development occurring in our universities with private company partners. At the 2013 Florida Energy Summit, several successful private Florida businesses and educators shared the latest breakthroughs in renewable technologies and energy efficiency. More than 400 summit attendees and 30 speakers gathered at the 2013 Florida Energy Summit to discuss the changing energy sector and how Florida can prepare to take advantage of future economic opportunities.

The FDACS OOE worked with Commissioner Putnam to introduce energy proposals for consideration by the Legislature in 2014. These recommendations are designed to help Florida capitalize on energy opportunities. They will reduce energy costs for businesses and consumers, reduce barriers for innovation and stimulate jobs. It is critical that Florida has an energy policy that embraces these goals and is long term in nature. Florida's businesses and consumers should expect a consistent and predictable energy policy that will improve the lives of all Floridians.

2. Florida's Energy Landscape

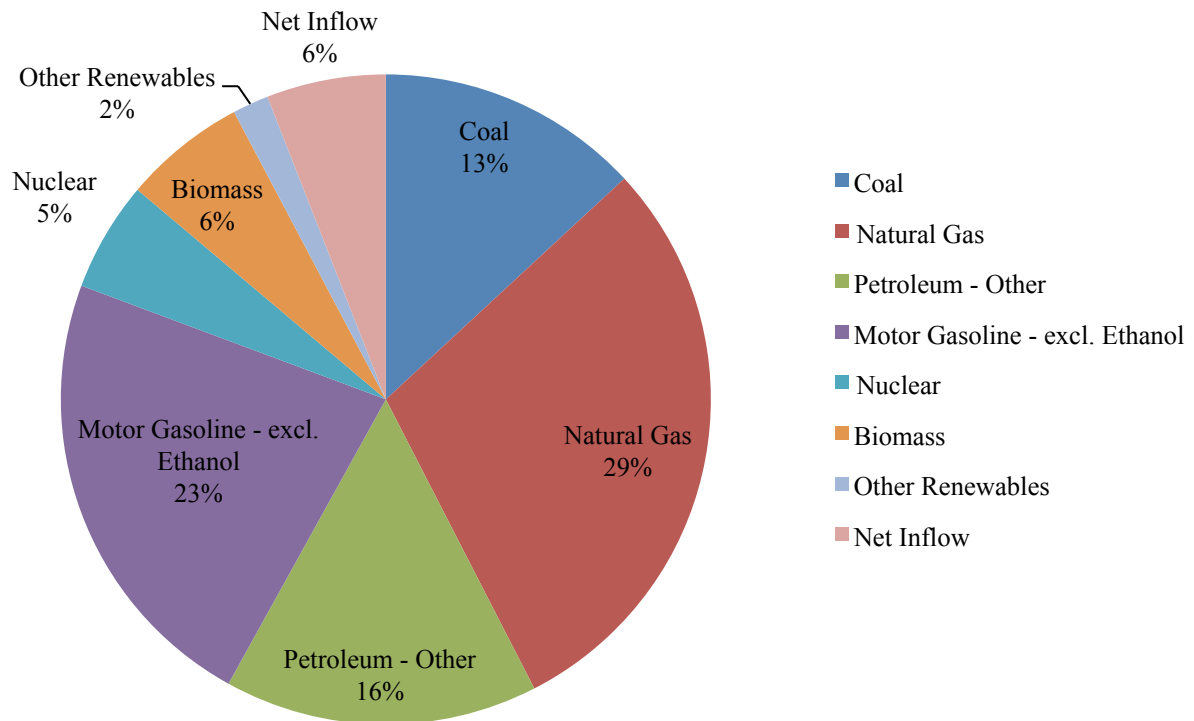
This chapter is a summary of Florida's energy profile; it includes information on fuel diversity, electric generation, electric rates, infrastructure, transportation fuels, renewable fuels and energy efficiency measures. In addition to providing a summary of Florida's energy landscape, this chapter provides an outlook on potential areas of opportunity for the state.

2.1 Florida's Overall Consumption of Energy (Electricity and Transportation Fuel)

According to the U.S. Department of Energy (USDOE) Energy Information Agency (EIA), Florida is ranked 44th in the nation in per capita energy consumption, consuming 221 million BTUs per person. More than 92 percent of Florida's electrical needs are generated in state; however, almost all the fuel to power those generators is imported from out of state. Florida is heavily reliant on natural gas and petroleum for electric generation and transportation fuel, respectively. This heavy dependence on imported fuel makes the state vulnerable to price fluctuations and fuel availability.

Florida Energy Consumption Estimates 2011

Source: USDOE EIA



The PSC stated in its 2013 Ten Year Site Plan Review that “although the Commission has cited the growing lack of fuel diversity within the state of Florida as a major strategic concern for the past several years, natural gas is anticipated to remain the dominant fuel over the planning horizon.” The

total electric generating capacity for 2012 is 58,189 megawatts, and the 2013 Ten Year Site Plan Review includes the planned addition of 9,960 megawatts of power.

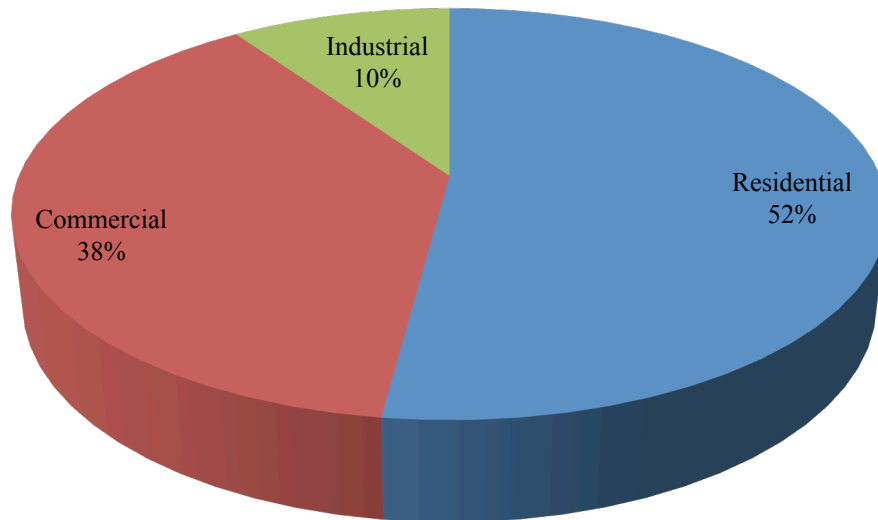
Florida receives most of its natural gas supply from the Gulf Coast Region via two major interstate pipelines: the Florida Gas Transmission line, which runs from Texas through the Florida Panhandle to Miami; and the Gulfstream pipeline, an underwater link from Mississippi and Alabama to central Florida. With the completion of the Cypress Pipeline in May 2007, the Jacksonville area has also begun receiving supplies from the liquefied natural gas (LNG) import terminal at Elba Island, Georgia. Sixty percent of Florida’s electric power sector is dependent on natural gas, which has grown over the past ten years. According to the PSC 2013 Ten Year Site Plan Review, natural gas as a fuel source will likely remain around 60 percent through 2022.

Duke Energy Florida retired the Crystal River Unit 3 nuclear power plant, leaving four remaining nuclear power plants in Florida. However, nuclear power is expected to increase slightly as FPL’s newly modified Turkey Point facilities come back online after upgrades were made in 2012. In addition, FPL has two new Turkey Point units planned for completion in 2022 and 2023.

Transportation fuel consumption is high because Florida is the fourth most populous state in the nation and has a significant tourism industry.

Energy Usage in GWh by Class (2013)

Source: PSC 2013 Ten Year Site Plan Review



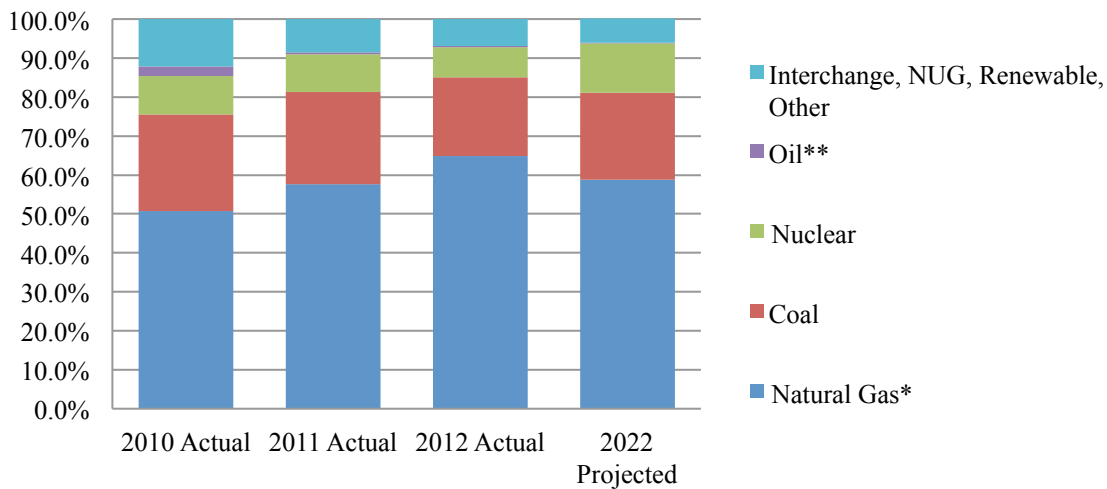
Florida has no oil refineries to serve the state’s transportation sector and relies on petroleum products delivered by tanker and barge to marine terminals near the state’s major coastal cities. Due in part to Florida’s tourist industry, demand for petroleum-based transportation fuels (motor gasoline and jet fuel) is among the highest in the United States.

2.1.1 Energy for Power

As stated previously, Florida relies on imported fossil fuels to power almost all of its electric generators. As of 2012, approximately 64.8 percent of Florida’s electric generation was powered by natural gas and that amount is projected to slightly decrease back to sixty percent based on the Ten Year Site Plans as presented yearly by the utilities to the PSC.

Florida Electric Generation Fuel Source Mix

Source: PSC 2013 Ten Year Site Plan Review



*Includes both utility and non-utility generation.

**Includes both residual and distillate oil.

In the past, Florida utilities attempted to maintain a balanced fuel mix of one third coal, one third nuclear and one-third natural gas, which was more stable if one fuel source became unreliable. Over time, utilities have moved away from that three fuel source balance because of a number of factors including:

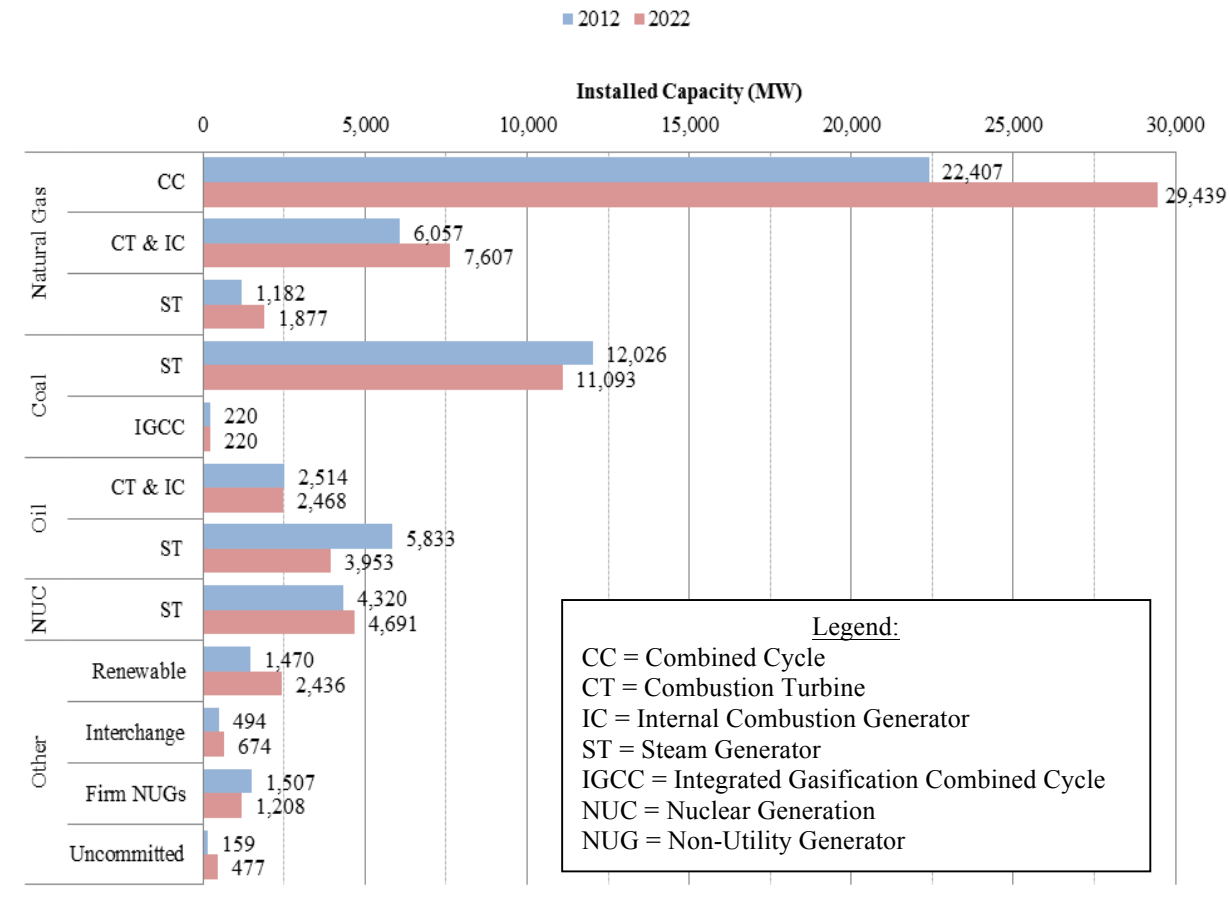
- Cleaner and less expensive natural gas generation facilities
- The high cost, lengthy permitting and construction time of nuclear power
- The high environmental and regulatory cost of coal generation

Facilities

In order to meet the demand for energy from their growing customer base, Florida’s utilities plan out increases to their generation capacity on a ten year rolling basis. In addition, Florida’s utilities plan on facility retirements or phase outs. The graph below conveys proposed changes in facilities, based on generation fuels, over the next ten years.

State of Florida - Installed Capacity (Existing & Projected)

Source: PSC 2013 Ten Year Site Plan Review, page 33, Figure 12



Rates

The rates for residential customers in Florida vary from utility to utility. They are based on many factors including the number of customers they serve, whether they generate their own power (or purchase it from another utility), and what type of fuel source provides their electricity (natural gas, nuclear, coal, etc.). The following is a brief synopsis of the PSC’s Comparative Rate Statistics as of December 31, 2012:

Residential Utility Rate Comparison High/Low per 1,000kWh			
Investor-Owned Electric Utilities	Average Bill \$114.59	High	\$131.27
		Low	\$92.38
Municipal Electric Utilities	Average Bill \$118.62	High	\$136.56
		Low	\$102.11
Cooperative Electric Utilities	Average Bill \$124.89	High	\$139.50
		Low	\$105.80

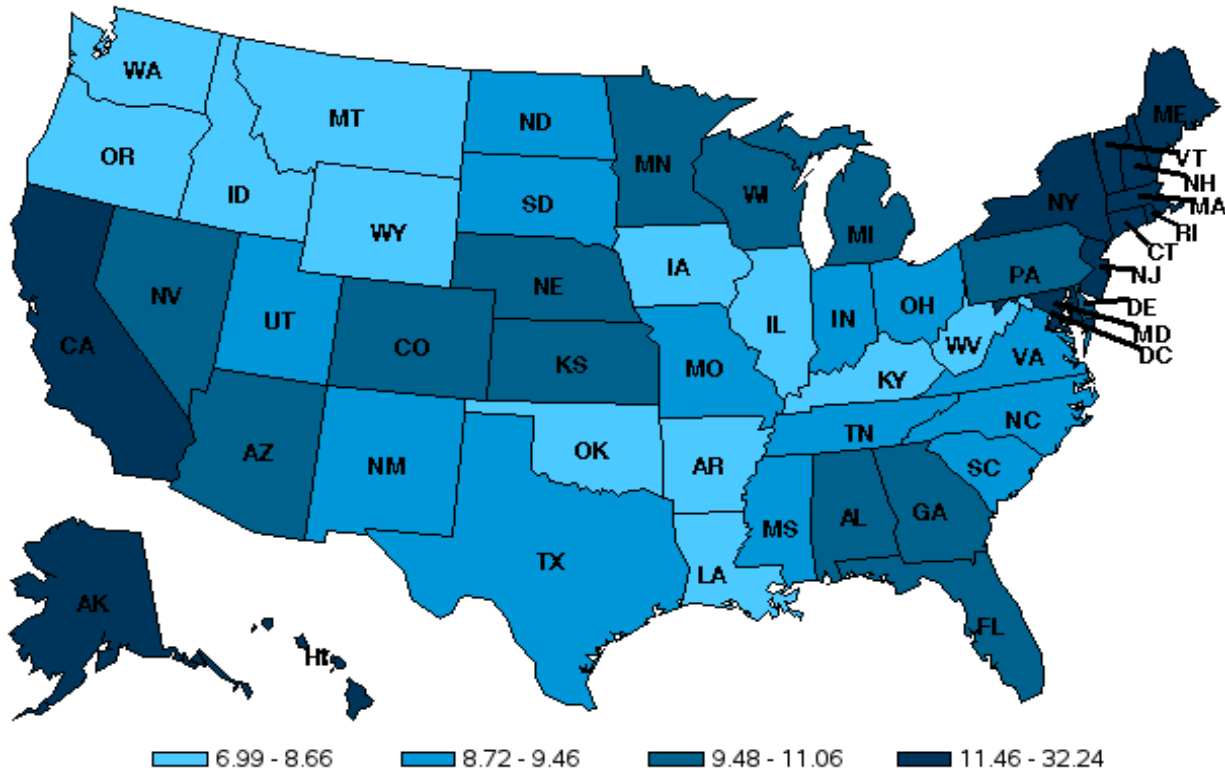
Source: PSC December 2012 Comparative Rate Statistics

Commercial/Industrial Utility Rate Comparison High/Low per 150,000kWh			
Investor-Owned Electric Utilities	Average Bill \$17,794.00	High	\$15,983.00
		Low	\$13,140.00
Municipal Electric Utilities	Average Bill \$17,144.06	High	\$21,547.00
		Low	\$13,430.00
Cooperative Electric Utilities	Average Bill \$15,556.13	High	\$20,950.00
		Low	\$11,489.00

Source: PSC December 2012 Comparative Rate Statistics

Florida is slightly higher than the national average for all electric rates at 10.53 cents per kilowatt hour of electricity compared to 10.45 cents per kilowatt hour nationally for September 2013 (EIA). However, residential electric rates are lower than the national average.

U.S. Electric Industry Average Revenue per Kilowatt-hour, September 2013



Source: Energy Information Administration

Note: The average revenue per kilowatt-hour of electricity sold is calculated by dividing revenue by sales.

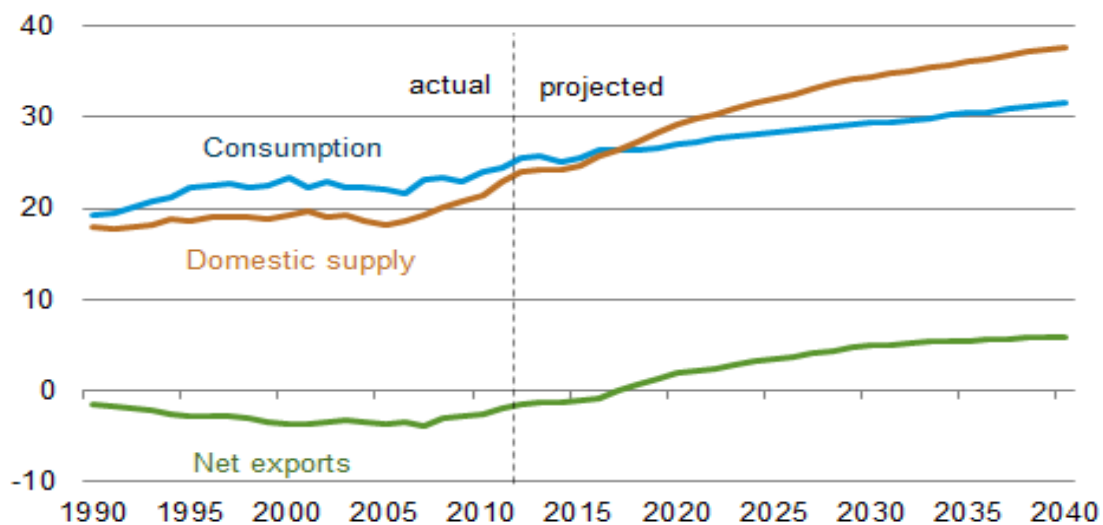
Source: Energy Information Administration http://www.eia.gov/electricity/monthly/update/end_use.cfm#tabs_temps-2

Natural Gas

Natural gas has quickly become the dominant fuel source for electric generation because of the increase in inexpensive domestically produced natural gas. It is also beginning to make inroads as a transportation fuel, especially for fleet vehicles, because of the lower cost in fuel and lower maintenance costs. Furthermore, the natural gas industry is proceeding with establishing export facilities. According to the EIA's Annual Energy Outlook for 2014, a slow rate of price increases are expected through 2037. A slow rate of price increases is expected because of the growth of consumption in the industrial and electric power sectors and, in the future, because of exported fuel. The United States is seeing low natural gas prices lead to more domestic industry growth.

Natural gas annual consumption, domestic supply, and net exports in AEO2014

trillion cubic feet



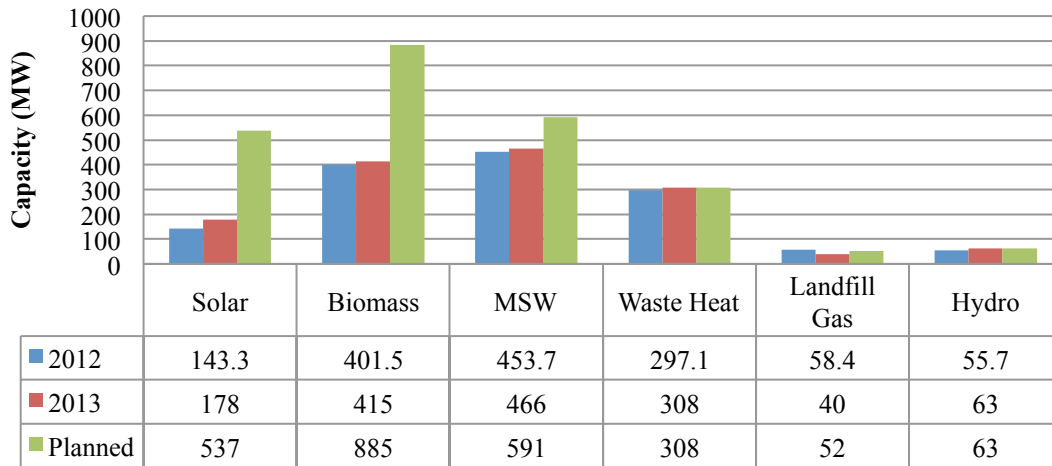
 Source: EIA, *Annual Energy Outlook 2014*.

Renewable Energy

According to the PSC's 2013 Ten Year Site Plan Review, approximately 84 percent of Florida's existing renewable energy generation comes from non-utility generators. As of December 2013, Florida has approximately 1,470 megawatts of renewable energy capacity and there is an additional 966 megawatts of renewable energy planned. The majority of the proposed additions are solar and biomass projects. However, renewable energy accounts for a small quantity of Florida's energy supply.

Renewable Energy Capacity Comparison

Source: FPSC's 2013 Ten Year Site Plan Review



Currently, the largest source of renewable energy in Florida is municipal solid waste burners (MSW). MSW uses residential waste as a feedstock and burns the waste to create steam which turns the electricity producing turbine. MSW accounts for 466 megawatts of electrical capacity in Florida. MSW facilities are equipped with advanced scrubbers to remove pollutants and reduce emissions. MSW is attractive to major population centers, because it diverts waste from entering the existing overburdened landfills while providing the benefit of a renewable energy source.

With a year-round growing season, Florida has more biomass resources than any other state. According to the Florida Energy Systems Consortium (FESC), Florida has the potential to account for seven percent of the U.S. total biomass resources. In most cases, the bio-energy facility must be located near the intended feedstock to make the process economically viable. Biomass also has the potential to be a significant economic driver, especially in rural locations. As such, the OOE provided \$3.9 million in state grant funds for research projects related to bioenergy technology development to help further the industry. Most importantly, these technologies utilize non-food feedstocks such as municipal waste, sugarcane waste, citrus pulp, forest residues, invasive trees/plants, or animal waste.

Florida's current installed solar capacity is 178 megawatts. Florida significantly expanded its solar capacity in previous years because of the state's solar rebate program and several large utility scale installations by FPL and Jacksonville Electric Authority (JEA). Currently, Broward County is working on the SunShot initiative sponsored by the USDOE to reduce the time and cost of permitting solar energy systems. Broward County received \$1.575 million for Phase II of their project. The purpose of Phase II is to continue to optimize the online permitting system while rolling this system out to regional partners who now include Alachua, Monroe, Orange, and St. Lucie Counties. The ultimate goal is to reduce the "soft costs" of solar installations statewide. Soft costs are labor, permitting time and fees, taxes, profit, and supply chain costs. According to the USDOE, soft costs account for 64 percent of the total cost of an installed solar energy system.

Large industries, such as orange juice processors, can create waste heat while manufacturing their products. To capture and utilize that waste heat they must redirect the waste heat or steam from their manufacturing process into a turbine to produce electricity. The process of capturing and redirecting

the heat or steam is a large undertaking. Often times the excess heat is used to offset energy usage by heating the building, sterilizing equipment, or heating water instead of direct energy production.

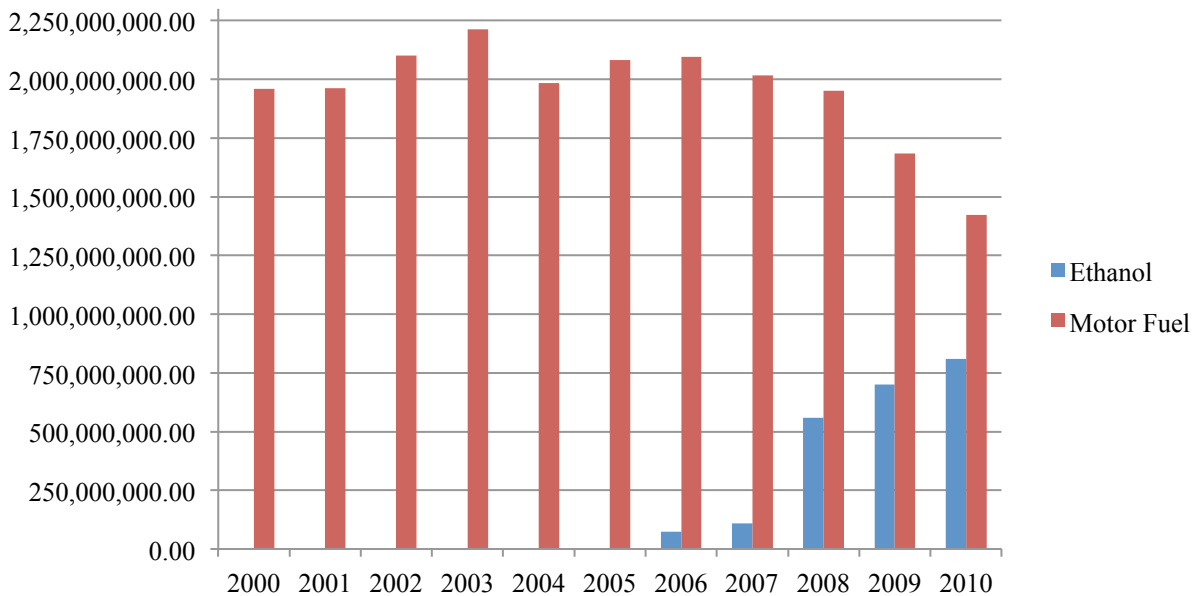
2.1.2 Transportation Energy

Petroleum Use

Florida’s transportation sector accounts for more than one-third of the total energy used in the state with nearly all transportation fuel being imported into the state. According to the USDOE Office of Energy Efficiency and Renewable Energy (EERE), Florida’s per capita consumption of motor gasoline in 2011 was 425 gallons, which is 15 gallons less than the state consumed per capita in 2010. Over the last 10 years, the state consumed 9.8 billion gallons of gasoline and diesel fuel per year and the average annual consumption is growing by 59 million gallons. Comparatively, according to the Florida Department of Environmental Protection, Bureau of Mining and Minerals Regulation, Florida produced 2,023,454 barrels of crude oil in 2011, with the majority of it coming from Jay Field in Escambia County. Florida does not have any in-state refineries to process crude oil.

Florida has a large in-state ethanol production market and ranked third nationwide in ethanol consumption. According to the USDOE, Florida consumed over 815 million gallons of ethanol in 2011.

Annual Motor Fuel Sale & Ethanol Consumption in Gallons



Source: U.S. EIA & USDOE EERE

Florida's Transportation Infrastructure

According to the United States Department of Transportation, Bureau of Transportation Statistics, Florida has an extensive transportation system, with 121,759 miles of public roads, 1,495 miles of interstate, 11,982 bridges, 2,902 miles of railroad tracks, 1,540 miles of inland waterways, and 126 public use airports.

An August 2013 article by *Florida Trend* refers to the innovative improvements Florida is making in its public transportation sector by the construction of rail lines in two major parts of the state. The SunRail commuter train in Orlando will open in May of 2014 providing service on a 32-mile line with continued construction of the 61.5-mile route planned for opening in 2016. Fort Lauderdale's 1.4-mile downtown area streetcar rail line, The Wave, is expected to begin service in 2016 with the rest of the 2.7-mile line to open at a later date.

In addition, according to a January 2014 article in *The Florida Current*, Florida's recent investment in port-deepening projects will allow for larger ships and facilitate the engagement of trade between the state and Latin America through use of the Panama Canal. The infrastructure improvements are promising for the exportation of goods from Florida to countries such as Panama, where Florida companies have already begun securing business.

Florida's Alternative Transportation Use

A number of Florida's private commercial fleet owners, as well as local governments and school boards, have begun the process of converting their fleets to natural gas in order to realize cost savings. There is a growing interest in using compressed natural gas (CNG) and LNG for large vehicles and more commercial operators, and governments are looking into the economic feasibility of converting their fleets. According to the USDOE Alternative Fuels Data Center, the state of Florida has 67 propane stations and 33 CNG stations. In addition, there are two LNG stations under development.

Electric vehicles (EV) are also an emerging alternative transportation energy source being used in Florida. Consumers, as well as private businesses and local governments, have been making the investment in electric vehicles as well as the infrastructure to support the charging of these vehicles. While a precise number is not known, the USDOE Alternative Fuels Data Center states that Florida has at least 405 EV charging stations installed.

2.2 Florida's Energy Efficiency and Conservation Efforts

Florida's energy conservation efforts are addressed by several different agencies. A majority of the American Recovery and Reinvestment Act (ARRA) grants administered by FDACS OOE were awarded to local governments for energy efficiency and conservation improvements. In addition, the Florida Department of Economic Opportunity (DEO) administers the Federal Weatherization Assistance Program (WAP) for Florida to assist low income citizens by improving the energy efficiency and comfort of their homes. Also, all Florida electric utilities have energy efficiency and conservation programs to assist their customers in reducing wasted energy and thus cutting their costs.

In the mid 1980s, when petroleum was scarce, prices were high and reducing energy demand and consumption was important, the Florida Legislature implemented the Florida Energy Efficiency and Conservation Act (FEECA). FEECA requires the PSC to set conservation goals for the four investor-owned utilities and large municipally-owned utilities. This legislation was enacted in order to reduce growth rates for electric demand, reduce electricity consumption, and conserve fossil fuels. The PSC

reviews the utilities' conservation goals at least every five years with the next review scheduled during 2014. The FDACS OOE will participate in that review.

Attachment A of this report provides the Executive Summary of the PSC's annual FEECA report. The report details the energy efficiency and conservation efforts by Florida's utilities.

2.3 New Trends

Florida Atlantic University's (FAU) Southeast National Marine Renewable Energy Center (SNMREC) will be the first in the world to establish ocean current turbine testing infrastructure. The testing facility is designed to determine the efficiency of various turbines to generate clean energy by using the ocean's current. State and federal regulatory agencies have partnered to establish policies and protocols. FAU initiated the permitting process in 2007.

Last summer, FAU was granted a final Environmental Assessment with a finding of no significant impact by the U.S. Department of Interior's Bureau of Ocean Energy Management. The finding of no significant impact — the proposed turbine testing facility is expected to have little environmental impact on the surrounding area — gave FAU a green light to begin negotiations for a five-year lease to conduct testing activities on the U.S. Outer Continental Shelf. The project involves the installation of multiple anchored floating "test berths" to evaluate ocean current turbine designs. Each test berth will consist of a buoy anchored to the sea floor 13 miles (22 km) off the coast of Fort Lauderdale to measure ocean conditions and allow ocean current turbine prototypes to be deployed from vessels moored in the Gulf Stream. The first technology to be tested will be a research turbine designed and built at FAU that will collect drive-train performance and reliability data valuable to commercial developers and regulatory agencies alike. SNMREC will perform additional surveys on the sea life and sea floor, as well as a final sea trial of the buoy and experimental ocean current turbine before installing the first test berth in 2014.

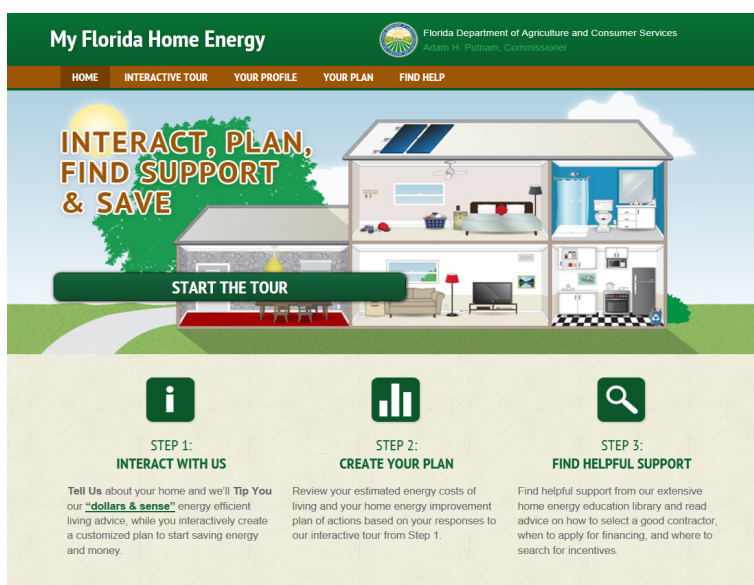
3. 2013 Accomplishments

The majority of accomplishments this year involved implementing House Bill 7117 passed in 2012, including the launch of a new Energy Clearinghouse of Information and initiating the Electric Vehicle Charging Infrastructure Rule. In addition, OOE hosted another Energy Summit.

3.1 Energy Clearinghouse of Information

In accordance with Section 570.0741 Florida Statutes, FDACS launched the Florida Energy Clearinghouse in February 2013: <http://www.freshfromflorida.com/Energy/Florida-Energy-Clearinghouse>. The Florida Energy Clearinghouse is a web portal to compare energy saving technologies, learn more about renewable energy technologies and research being conducted in Florida, and learn more about energy usage and production. During 2013, FDACS added several interactive components to the Florida Energy Clearinghouse.

In June 2013, FDACS launched a web-based, interactive application that analyzes a Florida homeowner's present energy situation and identifies potential energy efficient products and services that may reduce their energy usage and therefore utility bills. The interactive application takes information provided by the homeowner, as well as publicly accessible data, to determine potential energy-efficient products, improvements or modifications that may be beneficial to consumers in their specific regions. The results are then ranked by cost and anticipated energy savings. The interactive application also provides information on different technologies that are available, as well as best practices.



In September 2013, FDACS launched another web-based interactive application that provides the public and policy makers a set of tools to review the data collected from projects funded by the ARRA in the state of Florida in a meaningful way. The dashboards, graphs, flowcharts and reports found on this website are designed to provide state and local governments with the opportunity to determine which projects offer the best return on investment and may be worth pursuing in the future. The

information used on this website was collected from various sources including the USDOE, FDACS OOE and various recipients from around the state of Florida.



FDACS is continuing to work with other state agencies and the FESC in order to gather the information to be posted on the website. The website is maintained by FDACS and is continually updated to provide users with the most accurate and up-to-date information available.

3.2 Electric Vehicle Charging Infrastructure Rule

Electric vehicles are an emerging alternative transportation energy source being used in Florida. Consumers, as well as private businesses and local governments, have been making the investment in electric vehicles as well as the infrastructure to support the charging of these vehicles. While a precise number is not known, the state currently has more than 400 EV charging stations.

FDACS OOE is currently in the rulemaking process to establish consistent criteria for the installation of electric vehicle charging stations in Florida. In April 2013, FDACS OOE staff released a draft rule with language to standardize the method of sale, labeling requirements and price-posting requirements as it relates to the EV charging stations. In May 2013, two workshops were held to receive public input on the draft rule to ensure consistency within the market for consumers. In July 2013 National Institute of Standards and Technology (NIST) adopted language related to national standards for electric vehicle charging stations. FDACS OOE staff is working to incorporate the NIST language in the departments draft rule and anticipates the rules will be adopted in the first half of 2014.

3.3 Grant Activities

One of the functions of the FDACS OOE has been to develop, award and manage various state and federal grant programs.

In May 2013, FDACS advertised and awarded grants for the Local Government Energy Efficient Lighting Grant Program utilizing federal Energy Efficiency and Conservation Block Grant funds (part

of the ARRA). The purpose of funding was to assist eligible local governments in: (1) reduction of their total energy use; (2) increase energy efficiency; (3) reduce energy costs through the replacement of inefficient lighting with energy efficient lighting; and (4) evaluate the actual energy savings received as a result of the project. Fifteen local governments received a total of \$3,110,760 to replace inefficient lighting with energy efficient lighting. The projects were completed in August of 2013. FDACS will track energy savings realized by grant recipients through July of 2014.

Another project completed in 2013 was the Sunshine State Building Initiative. FDACS and the Department of Management Services (DMS) worked together to retrofit ten chiller systems, install a 145 kilowatt solar photovoltaic system, perform building and mechanical system "tune ups" and optimization, install energy management systems and equipment control automation, and install upgraded high-efficiency controls to heating, ventilation and air conditioning systems. Eight buildings in the state's fleet are getting much needed retrofits thanks the Sunshine State Buildings Program funded by the ARRA. DMS has already reduced their electrical consumption by 11,084,251 kilowatt hours, for a savings of \$1,031,944. These projects will continue to save more electricity and dollars over time. DMS expects the projects to save taxpayers more than \$2,211,000 over the next five years and nearly \$5 million over the next eleven years.

Ongoing Grant Work

The Florida Opportunity Fund, Inc. (FOF) was created by the Florida Legislature in 2007 as a non-profit organization to increase the availability of capital in Florida through both loan and equity investment instruments. It is designed to help Florida businesses and promote the adoption of commercially available energy efficient and renewable energy products and technologies. \$36 million of the federal ARRA funds were granted to the FOF; to date, investments have been made in six businesses, and two other companies are under review.

Another of the FDACS OOE ongoing grant projects is the Multifamily Energy Retrofit Program in partnership with the Florida Housing Finance Corporation. The goal of this program is to reduce energy use and cost in multifamily buildings by updating and replacing old inefficient building components with energy efficient components. This will be accomplished by providing loans to qualified properties within Florida Housing's portfolio for specific energy efficient improvements identified in an energy audit. Energy audits will have to show a projected energy savings for the property, and properties will be required to report energy use/savings to show actual energy performance improvement.

Also, FDACS OOE advertised and awarded grants for the Research and Development Bioenergy Grant Program that utilizes a state of Florida appropriation. The goals of this program include: (1) to further understand and develop bioenergy utilizing Florida-grown crops or biomass; (2) to develop additional means to expand energy related agribusiness in the State of Florida; (3) to stimulate in-state capital investments and economic development; (4) to research and develop new bioenergy related technologies; and (5) to create energy related jobs. Six projects were selected and are in the solicitation stage.

3.4 Natural Gas Fuel Fleet Vehicle Rebate Program

The Natural Gas Fuel Fleet Vehicle Rebate Program will help reduce transportation costs in Florida and encourage freight mobility investments that contribute to the state's economic growth. The program was created by House Bill 579 (2013) and will incentivize both public and private fleets to use more natural gas vehicles by either converting existing vehicles or purchasing/leasing natural gas vehicles.

Entities with fleets of three or more vehicles doing business in Florida are eligible to apply for a rebate of up to \$25,000 per vehicle, with a limit of \$250,000 per year of the program. The amount of each rebate will be based on the conversion cost or incremental cost incurred by the applicant, not to exceed 50 percent of those costs, where the incremental cost is the excess costs associated with the purchase or lease of a natural gas fuel motor vehicle as compared to an equivalent diesel or gasoline-powered motor vehicle. Eligible vehicles must have been placed into service on or after July 1, 2013.

FDACS OOE held three workshops to develop the rules for the program and used the stakeholder input gathered at those workshops in the development of the program rules. The rules administering the Natural Gas Fuel Fleet Vehicle Rebate program became effective January 7, 2014, which is also the first day applications were accepted.

3.5 Florida Renewable Energy Tax Incentives

The Florida Renewable Energy Tax Incentives will assist companies producing renewable energy and creating new jobs. All forms of renewable energy in Florida, including biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat or hydroelectric power, are eligible for the production tax credit. Capital costs, operation and maintenance costs, and research and development costs made in connection with an investment in the production, storage and distribution of biodiesel, ethanol and other renewable fuels in the state are eligible for the investment tax credit. In addition, materials purchased in the state used in the distribution, including fueling infrastructure, transportation and storage of biodiesel, ethanol and other renewable fuels are eligible for a Florida sales tax refund. These tax credits are not energy subsidies like the federal grants or loans. Rather, they are tax credits toward actual spending, investment and hiring that takes place in Florida. Only the projects that benefit Florida will receive tax credits in return.

FDACS took deliberate steps to create rules that hold recipients accountable and ensure only projects that benefit Florida are eligible for tax incentives. The rules administering the tax incentives became effective on May 2, 2013. To date, FDACS OOE granted eighteen (18) tax credits totaling \$18,104,676.43. The 2013 Renewable Energy Tax Incentives Assessment and follow-up Economic Impact Analysis provides for a more in-depth picture of both the utilization of the incentives as well as the resulting economic impact of the eligible projects. The 2013 Renewable Energy Tax Incentives Assessment is available at <http://www.freshfromflorida.com/Energy/Reports-Publications>.

3.6 Florida Energy Summit 2013

The third Florida Energy Summit was held October 14-15, 2013. The Florida Energy Summit grew out of the Farm-to-Fuel Summits, which had been held annually since 2005. In 2011, when the OOE was transferred to FDACS, the summit was expanded to include all sources of energy as well as energy efficiency and conservation.

The theme for the 2013 program was *The Changing Energy Tide*. More than 400 summit attendees and thirty speakers gathered together to find ways to capitalize on the energy opportunities available in Florida. The panel discussions included representatives from a broad spectrum of Florida's energy industry and featured several successful private businesses that are leading the state in energy efficiency and renewable energy investments.

Embracing change was the common theme that emerged from many of the panel discussions this year. Many speakers noted that everything is changing in the energy industry and old assumptions will not carry business into the next decade. Five years ago the United States was not experiencing the natural gas boom it is now. However, in twenty years the United States may not still be producing the same amount of natural gas. As a result, all forms of energy including energy conservation should be under consideration by the state. Further, all the changes within the energy industry brings new opportunities for investment and technologically creative ideas from our universities and small businesses.

The keynote speaker at the 2013 Florida Energy Summit was Michael Levi, the David M. Rubenstein Senior Fellow for Energy and the Environment at the Council on Foreign Relations (CFR), a nonpartisan foreign policy think tank. He is also Director of the CFR's Program on Energy Security and Climate Change and noted author of *The Power Surge: Energy, Opportunity and the Battle for America's Future* in 2013. Mr. Levi laid out the argument in his presentation that it is in the best interest of the United States to pursue fossil fuel development, renewable energy technologies and conservation policies. He believes the United States should use all the tools available in order to stimulate jobs, increase national security and reduce air pollution. Mr. Levi detailed events over the past 12 years that are driving energy policy changes. Those events include the development of the Toyota Prius, hydraulic fracturing, and the state of the art development of solar and wind. In each case the advancement of policies and technologies enabled these changes to occur and in each case it has stimulated the U.S. economy, reduced air pollution, and enhanced energy security. Mr. Levi applauded the work to expand conservation and deploy renewable energy at the state level and he recognized that states are the engines of democracy and are leading the way on energy policy.

While the thoughts and ideas expressed by each of the speakers are not necessarily representative of FDACS, it was informative and important to hear from a diverse group of speakers.

3.7 FESC Research Developments

The FESC was created in 2008 and is unique in the United States; no other state has a statewide energy consortium involving all of its universities. The concept combines all of the state's university resources into one statewide center to advance energy research, technology transfer/commercialization, energy education, and outreach in this rapidly changing and critically important field.

The original allotment of state funds was \$38 million, which was used to leverage an additional \$265 million in energy research funding from third party entities. The research conducted with these funds led to 169 invention disclosures and 64 energy technologies licensed to industry, the creation of 24 start-up companies in the energy sector, and the dissemination of FESC research results (more than 700 publications and more than 700 presentations), which promote Florida's energy capabilities and technical leadership nationwide. The Consortium's success is built on the FESC's network of more than 270 companies, more than 300 faculty and more than 130 research parks, investors, entrepreneurs and government laboratories.

In addition, FESC provided assistance in coordinating the student posters for the 2014 energy summit and they have developed more than fifty Energy Fact sheets. The OOE and FESC will continue collaborating through the year 2014 to further energy related research and development within Florida.

4. On the Horizon

In 2014, the FDACS OOE will continue implementing House Bill 7117, continue to monitor, evaluate and report the findings of the tax assessments legislated in 2012, to flow through to Florida's communities any federal grants made available through the USDOE State Energy Program, and follow closely the PSC's FEECA Docket.

FDACS OOE anticipates releasing the Notice of Funding Availability in April 2014 for the Renewable Energy and Energy-Efficient Technologies (REET) Grant Matching Program, as outlined by Commissioner Putnam during the 2013 Florida Energy Summit. This program will match grants offered by the federal government or private organizations to support demonstration, commercialization, research and development projects that significantly increase energy efficiency for vehicles and commercial buildings. Nearly \$4 million remains available through the 2006 REET Program, and this funding will help level the playing field for Florida innovators and entrepreneurs to compete with other states for federal and private grants.

In addition, the FDACS OOE worked with Commissioner Putnam to introduce energy proposals for consideration by the Legislature in 2014. Below, please find a summary of some of the energy proposals.

- **Tax Cut on Energy Consumption** – Commissioner Putnam proposed a measure that would cut the tax businesses pay on electricity consumption in half, from 7 percent to 3.5 percent over three years. This measure would level the playing field for Florida businesses in comparison with other states in the Southeast and would save Florida businesses \$225 million per year.
- **Long-Term, Sustainable Funding Source for Florida's Education Infrastructure** – In addition to the tax cut, Commissioner Putnam proposed Florida redirect the remaining revenue businesses pay for electricity consumption – or \$225 million per year – to support Florida's education infrastructure. Florida's energy industry relies on a well-educated workforce and investing in Florida's education infrastructure will help provide Florida's students with the resources they need to succeed and compete in a global economy.
- **Energy Star Appliance and Water Sense Products Sales Tax Holiday** - The proposal creates a sales tax holiday weekend in October of 2014 for select Energy Star appliances and Water Sense Products. This program will incentivize consumers to purchase appliances and products that will help the state save energy and water, and help consumers save money on their monthly utility bill.
- **Alternative Fueling Stations Online Inventory** - This proposal would allow EV charging stations and alternative fueling stations installed for public use to voluntarily report to FDACS basic consumer information such as the type of alternative fuel available, the station's name and address, and any fees or costs associated with the fuel purchase. Reporting this information would allow FDACS to establish a database of alternative fuel stations and assist Floridians and tourists in finding where alternative fuel stations are available for their use.

FDACS OOE is also exploring an amendment to the Florida Constitution to exempt commercial property owners from having their real property taxes increase when they install renewable energy

devices. Currently, residential property owners enjoy a tax exemption on solar photo voltaic generating devices from their property appraisals; however, commercial businesses do not. This amendment would place residential and commercial investments in renewable energy on parity, and it would remove a barrier to investment in solar energy.

FDACS OOE will continue to work with the Legislature and Governor to secure a stable, reliable and diverse supply of energy for Florida.

Executive Summary of the Florida Public Service Commission's Energy Efficiency and Conservation Act (FEECA) Report

The entire report as prepared by the Florida Public Service Commission, Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act, can be found at:
<http://www.floridapsc.com/publications/pdf/electricgas/FEECA2013.pdf>

Reducing Florida's peak electric demand and energy consumption became a statutory objective in 1980, when the Florida Energy Efficiency and Conservation Act (FEECA) was enacted. Codified in Sections 366.80 through 366.85 and Section 403.519, Florida Statutes (F.S.), FEECA emphasizes reducing the growth rates of weather-sensitive peak demand, reducing and controlling the growth rates of electricity consumption, and reducing the consumption of scarce resources, such as petroleum fuels. Section 366.82(2), F.S., requires the Public Service Commission (Commission or PSC) to set appropriate goals for the seven electric utilities subject to FEECA at least every five years. Commission rules have defined goals with respect to annual electric peak demand and energy savings over a ten-year period, with a reset every five years. The seven utilities currently subject to FEECA are Florida Power & Light Company (FPL), Duke Energy Florida, Inc. (DEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), Orlando Utilities Company (OUC), and JEA. Once goals are established, the utilities must submit for Commission approval, cost-effective demand-side management (DSM) plans, which contain the DSM programs designed to meet these goals.

This report fulfills three Commission statutory obligations. The Commission is required by Section 366.82(10), F.S., to provide an annual report to the Legislature and the Governor summarizing the adopted goals and progress achieved toward those goals. Section 377.703(2)(f), F.S., requires the Commission to file information on electricity and natural gas energy programs with the Department of Agriculture and Consumer Services. Section 553.975, F.S., requires the Commission to submit a biennial report to the Governor, President of the Senate and Speaker of the House regarding the effect of state energy standards on conservation.

Section 1 of this report provides a history of FEECA, highlights savings produced by utility programs since 1980, and provides a description of existing tools for increasing conservation throughout the state. Section 2 discusses current goals and achievements of the FEECA utilities. For context, Section 3 provides an overview of Florida's electricity market. Section 4 discusses methods the Commission has used to educate consumers about conservation and provides a list of related web sites. Finally, Appendix 1 provides a description of the conservation programs currently offered by the FEECA utilities.

Conservation Achievements

Over the last thirty-three years, the FEECA utilities' DSM programs in total have reduced winter peak demand by an estimated 6,465 megawatts (MW) and summer peak demand by an estimated 6,737 MW. The demand savings from these programs have resulted in the deferral or avoidance of a

substantial fleet of baseload, intermediate, and peaking power plants. These programs have also reduced total electric energy consumption by an estimated 8,937 gigawatt-hours (GWh).

Since 1981, Florida's investor-owned electric utilities have recovered over \$5.7 billion of conservation expenditures for DSM programs through the Energy Conservation Cost Recovery (ECCR) clause. Approximately \$2.9 billion of the total conservation program expenditures recovered have occurred in the last ten years. In 2012, Florida's investor-owned electric utilities recovered over \$387 million in conservation program expenditures, performed more than 206,000 residential audits, and offered over 100 conservation programs for residential and commercial customers.

Consumer choice plays an important role in reducing the growth rates of electrical demand and energy in Florida. Consumers may support electric energy conservation through a variety of actions including constructing smaller, more efficient homes, buying energy-efficient appliances, installing energy-efficiency upgrades to existing homes and increasing the use of the most cost-effective demand-side renewable systems. The Commission's consumer education program offers several tools to promote consumer awareness of conservation and energy efficiency opportunities.

Conversely, prescriptive mandates play a major role in conservation. Building code requirements established by the Florida Building Commission in 2008, per legislative directive, have increased the energy performance of new buildings by at least 20 percent compared to the 2007 Energy Efficiency Code. State and Federal minimum efficiency standards for residential appliances and commercial equipment, along with building construction standards, complement state level utility-sponsored DSM programs that consumers may participate in on a voluntary basis. For example, in 2013, the USDOE issued an update for the energy conservation standards for residential microwave ovens which could reduce energy consumption by up to 75 percent in standby mode and revised energy conservation standards for residential room air conditioners. The DOE also initiated rulemaking to amend testing procedures for residential refrigerators and freezers to account for ice-making energy use and to update energy use for other features. Once finalized, the new standards for Energy Star certified refrigerators and freezers would use approximately 10 percent less energy than models meeting the current 2014 standards. Lighting standards have changed as well, with various watts of incandescent bulbs being phased out and becoming no longer available for purchase. On January 1, 2012, traditional 100 watt incandescent light bulbs were phased out. Similarly, 75 watt incandescent bulbs were phased out as of January 1, 2013, and as of January 1, 2014, 60 watt and 40 watt incandescent bulbs are no longer available.

Section 2 of this report compares the FEECA utilities' demand and energy savings to the goals set by the Commission. In 2010, the Commission approved DSM plans for OUC, JEA, FPUC, and TECO. Gulf's DSM plan was approved in February 2011. The Commission voted to modify the proposed DSM plans of FPL and DEF on June 26, 2011. The modification included the notation that the approved plans for FPL and DEF would consist of the existing programs in effect on the date of the Orders.

Section 366.82(8), F.S., also provides authority for the Commission to assign financial rewards and penalties to investor-owned utilities (IOUs). The Commission was authorized by 2008 legislation to allow an IOU to receive an additional return on equity of up to 50 basis points for exceeding 20 percent of its annual load growth through energy efficiency and conservation measures. Specifically, to FPL and DEF, the Commission ruled that if their achievements surpassed their established goals, the utilities could be eligible for a financial award. Conversely, if FPL and DEF's achievements fell below the savings projected under their modified DSM plans, the utilities could be financially penalized. To

date, the Commission has not awarded financial awards or assessed penalties for IOUs subject to FEECA. Such actions could be decided in a limited proceeding as established by the Commission in Order No. PSC-09-0855-FOF-EG.

On July 26, 2013, the Commission opened dockets for each of the seven FEECA utilities to file new goals.¹ The utilities will submit testimony beginning April 2014. FPUC and OUC received approval to submit goals based on proxy methodologies of Gulf (FPUC) and TECO (OUC). Both FPUC and OUC are required to file their goal calculations within ten days of the Commission's approval of the goals for the respective proxy utility. Both FPUC and OUC will also be excused from participating in the hearing of the new goals proceedings.

An assessment of the 2012 annual goals compared to each utility's annual achievements during 2012 reveals that Gulf, OUC, and JEA exceeded their demand and energy savings goals in every category. FPL, DEF, TECO, and FPUC did not surpass their demand and annual goals in some categories for at least one customer sector during 2012. The primary reasons given by these utilities for not meeting their goals included lower than expected consumer participation due to weak economic conditions, unexpected delays in implementing new programs, and the need for increased marketing efforts.

Conclusion

The potential demand and energy savings from utility-sponsored conservation programs are affected by consumer education and behavior, building codes, and appliance efficiency standards. Consumer actions to implement energy efficiency measures outside of utility programs as well as codes and efficiency standards, create a baseline for a new program's cost-effectiveness and reduce the amount of incremental energy savings available from utility programs. Utility programs are designed to incent behavior that exceeds current building codes and minimum efficiency standards. It should be noted that the savings from these programs are somewhat uncertain because they depend on voluntary participation from customers. However, the expense is shared by all customers. As such, customer participation in utility-offered DSM and energy conservation programs, along with individual efforts to use electrical energy wisely, remain fundamental elements for reducing the demand for energy.

Conservation and renewable energy are expected to continue to play an important role in Florida's energy future. The Commission will continue its efforts to encourage cost-effective conservation and renewable energy to reduce the use of fossil fuels and defer the need for new generating capacity to ensure a balanced mix of resources that reliably and cost-effectively meet the needs of Florida's ratepayers.

¹ See Docket Nos. 130199-EI through 130205-EI.