



Review of 2007 Ten-Year Site Plans for Florida's Electric Utilities

Florida Public Service Commission

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LIST OF UTILITIES FILING A TEN-YEAR SITE PLAN

FPL	Florida Power & Light Company
GULF	Gulf Power Company
PEF	Progress Energy Florida
TECO	Tampa Electric Company
FMPA	Florida Municipal Power Agency
JEA	JEA (formerly Jacksonville Electric Authority)
LAK	City of Lakeland
OUC	Orlando Utilities Commission
TAL	City of Tallahassee
SEC	Seminole Electric Cooperative

LIST OF ACRONYMS

CC	Combined Cycle generating unit
Commission	Florida Public Service Commission
CPVRR	Cumulative Present Value Revenue Requirements
CT	Combustion Turbine generating unit
DEP	Florida Department of Environmental Protection
DOE	United States Department of Energy
DSM	Demand-Side Management
ECCR	Energy Conservation Cost Recovery Clause
EIA	Energy Information Administration
ERO	Electric Reliability Organization
EUE	Expected Unserved Energy
FEECA	Florida Energy Efficiency and Conservation Act
FRCC	Florida Reliability Coordinating Council
IGCC	Integrated Coal Gasification Combined Cycle generating unit
LNG	Liquefied Natural Gas
LOLP	Loss of Load Probability
MMBtu	Million British Thermal Units
MSW	Municipal Solid Waste
MW	Megawatt
NEL	Net Energy for Load
NERC	North American Electric Reliability Corporation
PC	Pulverized Coal generating unit
PPSA	Power Plant Siting Act
RFP	Request for Proposals
RTO	Regional Transmission Organization
TLSA	Transmission Line Siting Act

1. EXECUTIVE SUMMARY

Suitability

Over the past few years, the Legislature and the Commission have stressed the importance of utilities maintaining a balanced fuel supply. Florida's utilities responded to these concerns through the inclusion of one nuclear and several coal-fired power plants in their 2007 Ten-Year Site Plans which were filed on April 2, 2007. Subsequent to the filing of the 2007 Ten-Year Site Plans, the uncertainty associated with future natural gas and coal prices and emerging energy policy at the state and federal levels concerning the impact of greenhouse gas emissions have resulted in several coal-fired plants no longer being considered as part of the current planning process. The affected utilities and associated power plants are listed below:¹

- Florida Power and Light (FPL): Florida Glades Power Park (1980 MW)
- Florida Municipal Power Agency (FMPA), JEA (formerly Jacksonville Electric Authority), Reedy Creek Improvement District (RCI),² and City of Tallahassee (TAL): Taylor Energy Center (768 MW)
- Tampa Electric Company (TECO): Polk Unit 6 (630 MW)
- Orlando Utilities Commission (OUC): Stanton Unit B (250 MW)

Additional details regarding the potential replacement of these coal plants are discussed in Chapter 3 of this report.

Pursuant to Section 186.801, Florida Statutes, the Commission has reviewed the utilities' 2007 Ten-Year Site Plans and finds them to be **suitable** because the plans were responsive to the energy policies in place at the time of filing. The Commission does expect, however, that the utilities' 2008 Ten-Year Site Plans will address alternatives to these coal-fired power plants, including a thorough review of additional demand-side conservation and supply-side generation needed to maintain an adequate, reliable, economical, and environmentally-sound supply of electricity for the citizens of Florida.

Areas of Concern

Fuel Diversity

Maintaining a balanced fuel supply adds value in terms of supply reliability and price stability. Fuel diversity is not always a cost-savings measure, but rather a risk mitigation strategy. Maintaining a balanced mix of fuel sources enhances reliability of supply and allows utilities to mitigate the effects of volatile price fluctuations. For example, the actual cost of natural gas for FPL more than doubled between 2002 and 2006. Florida's utilities responded to these concerns by proposing several coal-fired plants in their 2007 Ten-Year Site Plans.

¹ In addition to the plants listed which are no longer being planned for construction as coal-fired units, Seminole Unit 3 (750 MW) was denied certification by the Department of Environmental Protection. Seminole has appealed this decision and a final decision has not been reached.

² Reedy Creek Improvement District does not file a Ten-Year Site Plan.

Proposed solid fuel plants identified in the utilities' 2007 Ten-Year Site Plans have encountered resistance on many fronts. Fuel cost uncertainties, high capital costs, and uncertainties regarding potential expenses related to future carbon emission regulations have all been cited as concerns. **Consequently, the generation additions identified in many of the utilities' 2007 Ten-Year Site Plans are no longer indicative of Florida's future capacity additions.** As a result, more than 4,000 MW of proposed capacity additions identified in the 2007 Ten-Year Site Plans need to be replaced. If, for example, natural gas becomes the de facto replacement fuel of choice, this option will result in natural gas generation producing more than 50 percent of Florida's energy as early as 2013.

Recent issues and events influencing the level of fuel diversity in Florida are summarized as follows:

- A first step toward attaining fuel diversity is the pursuit of non-generating alternatives to new construction, such as energy conservation and demand-side management (DSM). During 2007, the Commission approved 12 new DSM programs for electric utilities, as well as modifications to 9 existing electric utility DSM programs. These actions should increase customer participation and reduce peak demand by approximately 66 MW over the planning horizon.
- Customer choices to reduce energy consumption will help electric utilities defer the need for future generating units and transmission lines. Using existing resources as long as possible and taking full advantage of DSM and energy conservation measures is important as fossil fuels, plant sites, and transmission corridors become increasingly scarce in the state.
- Renewable generation is another key component of a diversified generation mix. In March 2007, the Commission finalized rules requiring utilities to continuously offer to purchase capacity and energy from renewable generators. On May 22, 2007, the Commission approved standard offer contracts resulting in the continuous offering of approximately 2,400 MW for Florida's four largest investor-owned utilities (IOUs). However, three of the four standard offer contracts filed were protested and a hearing is currently scheduled for early 2008.
- Since January 1, 2007, the Commission has approved two negotiated purchased power contracts with renewable generators totaling approximately 120 MW. Three IOUs have also issued requests for proposals of capacity or energy that would come from renewable sources.
- FPL has recently announced that it is pursuing a wind project, up to approximately 20 MW, in St. Lucie County and as much as 300 MW of solar powered generating capacity. However, the company has not provided estimates of in-service dates or cost-effectiveness analyses for these facilities.

- The Commission held workshops in January, April, and July 2007, assessing the availability, development, and facilitation of additional renewable energy in Florida. The Commission conducted a rule development workshop on net metering and interconnection standards for renewable generators in August 2007, followed by a staff workshop in October 2007. On December 18, 2007, the Commission proposed a net metering and interconnection rule that would apply to all renewable generation technologies up to 2 MW in size, expedite the interconnection of customer-owned renewable generation, and allow customers to offset their consumption through net metering. Comments on the proposed rule must be filed by January 25, 2008.
- In 2007, three determination of need petitions, totaling over 3,300 MW of planned coal-fired generation, were filed with the Commission. Two petitions were withdrawn³ by the utilities and one was denied by the Commission because the utility failed to demonstrate that the proposed project was the most cost-effective alternative available. In addition, the 750 MW coal-fired Seminole Unit 3 was denied final certification by the Department of Environmental Protection (DEP) on August 15, 2007. This decision has been appealed by SEC.
- On May 24, 2006, the Commission approved the need for OUC to construct a 249 MW IGCC plant slated to be in service by 2010. On November 15, 2007, the OUC announced that it was canceling the unit in favor of a natural gas-fired combined cycle unit, again because of economic and environmental uncertainty.
- Both FPL and PEF have announced plans to expand the capacity at each of their existing nuclear plants. The Commission approved the need for the uprate for the PEF unit on February 8, 2007. On December 10, 2007, the Commission approved the need for the uprates of the FPL units. Combined, the uprates of the PEF and FPL units will add approximately 600 MW of additional nuclear capacity for the years 2009 through 2013.
- PEF's Ten-Year Site Plan includes plans to construct a new 1,125 MW nuclear plant by 2016. On October 16, 2007, FPL filed a petition for determination of need for two new nuclear units, up to 1,500 MW each, for the years 2018 and 2020. PEF is expected to file a petition for need determination in early 2008. If constructed and placed into service, these units would further diversify Florida's generation mix.
- Because of the long lead times associated with new nuclear generation and the removal of several coal-fired generating plants from the current planning process utilities are likely to add natural gas-fired power plants in the near future. Therefore, utilities should continue to evaluate diversity within a fuel type, such as liquefied natural gas (LNG) and gas storage, as options to traditional sources and delivery methods for natural gas.

³ The Taylor Energy Center and the Polk Unit 6 projects were withdrawn from the certification process.

Outlook

Florida's utilities must continue to explore alternatives to natural gas energy generation. Greater emphasis must be placed on increasing public knowledge and awareness of energy conservation. Utilities must continue to develop and employ all cost-effective DSM measures. Ongoing efforts to further develop and employ renewable energy generation by both utilities and customers should provide Florida's utilities with added non-traditional energy generation. The construction of new nuclear generation will not only increase fuel diversity but provide energy without the emission of greenhouse gases. Advancements toward "clean coal" technology and the resolution of greenhouse gas emission standards are needed to address the uncertainties currently associated with the addition of coal generated energy.

Forecasts of the state's growing total energy demand continue to surpass current conservation, DSM, and renewable energy programs offered by Florida's utilities. Meeting this increasing demand will require the addition of traditional generation capacity to satisfy reliability requirements. The recent denial and withdrawal of several coal-fired units from the utilities' plans may result in the addition of natural gas-fired generation over the next several years. Therefore, utilities should continue to evaluate all options of natural gas supply and delivery, such as liquefied natural gas (LNG), natural gas storage, and possibly additional pipelines, to meet the increasing demand for natural gas.

2. INTRODUCTION

STATUTORY AUTHORITY

Section 186.801, Florida Statutes, requires that all major generating electric utilities in Florida submit a Ten-Year Site Plan to the Florida Public Service Commission (Commission) for review. Section 377.703(3)(e), Florida Statutes, requires the Commission to analyze and provide natural gas and electricity forecasts to the Florida Department of Environmental Protection (DEP).

Each utility's Ten-Year Site Plan contains projections of the utility's electric power needs, fuel requirements, and the general location of proposed power plant sites and major transmission facilities. In accordance with the statute, the Commission performs a preliminary study of each Ten-Year Site Plan and is required to determine whether it is **suitable** or **unsuitable**. The results of the Commission's study are contained in this report, *Review of 2007 Ten-Year Site Plans*, which is forwarded to the DEP for use in subsequent power plant siting proceedings.

To fulfill the requirements of Section 186.801, Florida Statutes, the Commission has adopted Rules 25-22.070 through 25-22.072, Florida Administrative Code. Electric utilities must file an annual Ten-Year Site Plan by April 1. Utilities whose existing generating capacity is below 250 megawatts (MW) are exempt from this requirement unless the utility plans to build a new unit larger than 75 MW within the ten-year planning period. Investor-owned utilities (IOUs) filing 2007 Ten-Year Site Plans include Florida Power and Light (FPL), Tampa Electric Company (TECO), Gulf Power Company (GULF), and Progress Energy Florida (PEF). Municipal utilities filing 2007 Ten-Year Site Plans include Florida Municipal Power Agency (FMPA), Orlando Utilities Commission (OUC), City of Lakeland (LAK), City of Tallahassee (TAL), and JEA (formerly Jacksonville Electric Authority). Seminole Electric Cooperative (SEC) also filed a 2007 Ten-Year Site Plan. Gainesville Regional Utilities (GRU) did not file a 2007 Ten-Year Site Plan.

PURPOSE

The Commission has broad-based authority over the reliability of Florida's electric system pursuant to Chapter 366, Florida Statutes, known as the "Grid Bill." The Grid Bill gives the Commission jurisdiction over the "planning, development, and maintenance of a coordinated electric power grid throughout Florida to assure an adequate and reliable source of energy for operational and emergency purposes in Florida." This *Review of 2007 Ten-Year Site Plans* serves as a foundation for exercising the Commission's authority under the Grid Bill.

A Ten-Year Site Plan gives state, regional, and local agencies advance notice of proposed power plants and transmission facilities. The Commission receives comments from the aforementioned agencies regarding various issues of concern. These comments are summarized in Chapter 7. Because a utility's Ten-Year Site Plan is a planning document containing tentative data, it may not contain sufficient information to allow regional planning councils, water management districts, and other review agencies to evaluate site-specific issues within their jurisdictions. Each utility must provide detailed data, based on in-depth environmental assessments, during certification proceedings under the Power Plant Siting Act (PPSA), Sections 403.501 - 403.518, Florida Statutes, or the Transmission Line Siting Act (TLSA), Sections 403.52 - 406.5365, Florida Statutes.

Since the Ten-Year Site Plan is not a binding plan of action on electric utilities, the Commission's classification of a Ten-Year Site Plan as **suitable** or **unsuitable** has no formal effect on the utility. Such a classification does not constitute a finding or determination in docketed matters before the Commission. The Commission may address any concerns raised by a utility's Ten-Year Site Plan at a public hearing.

Information Sources

On April 2, 2007, ten utilities filed Ten-Year Site Plans. The Commission held a public workshop on August 15, 2007, to facilitate discussion of the plans.

In addition to the individual utility filings, the Commission also relies on supplemental data requests made to the reporting utilities, as well as other sources. The Florida Reliability Coordinating Council (FRCC) annually publishes several documents that assess the adequacy and reliability of Peninsular Florida's⁴ generating units and transmission system. The Commission used these FRCC documents to supplement its *Review of 2007 Ten-Year Site Plans*:

- The 2007 *Regional Load and Resource Plan* contains aggregate data on demand and energy, capacity and reserves, and proposed new generating unit and transmission line additions for Peninsular Florida as well as statewide. The FRCC submitted this study in July 2007.
- The 2007 *Reliability Assessment* is an aggregate study of generating unit availability, forced outage rates, load forecast methodologies, and gas pipeline availability. The FRCC submitted this study on August 15, 2007.
- The *Long Range Transmission Reliability Study* is an assessment of the adequacy of Peninsular Florida's bulk power and transmission system. The study includes both short-term (1-5 years) detailed analysis and long-term (6-10 years) evaluation of developing trends that would require transmission additions or other corrective action. The FRCC submitted an executive summary of this study on August 15, 2007.

RESOURCE ADDITIONS

Table 1 reflects the aggregate capacity additions, by generating unit type, over the ten-year planning period of 2007-2016, based on the Ten-Year Site Plans filed on April 2, 2007. At the time of filing, the state's electric utilities planned to add a net capacity of 16,338 MW over the next ten years. As stated earlier in this report, the construction of several planned coal-fired units have been canceled. The types and magnitude of replacement capacity will need to be addressed in the 2008 Ten-Year Site Plans. As in past years, the majority of new capacity planned in the 2007 Ten-Year Site Plans had been slated to come from gas-fired combined cycle units. While coal and coal-gasification generating units were projected to contribute a larger amount to the state's proposed capacity additions than was projected in the past, approximately twice as much new gas-fired capacity as solid fuel capacity was being planned during the planning horizon. With the removal of coal as a boiler fuel, the state's dependency on natural gas-fired generation is likely to increase to an even higher percentage.

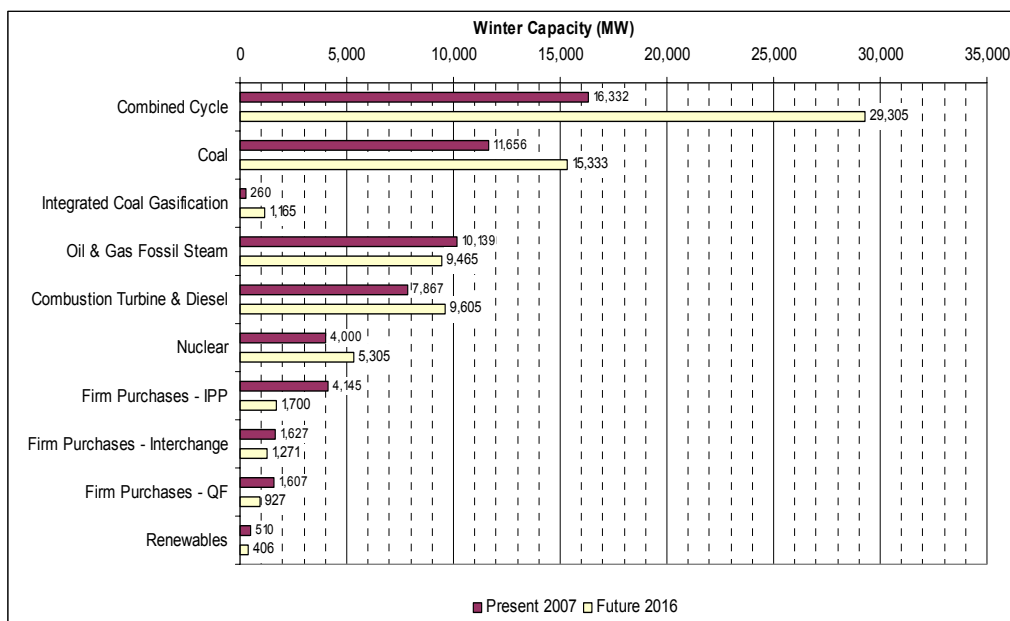
⁴ Peninsular Florida refers to the FRCC region which includes all utilities with the exception of Gulf Power Company.

Figure 1 illustrates the present and future aggregate capacity mix. The capacity values in Figure 1 incorporate all proposed additions, changes, and retirements from Table 1. Negative values in the table reflect the retirement of fossil steam units, the expiration of firm capacity interchange contracts, and the expiration of firm capacity contracts with independent power producers, qualifying facilities, and renewable energy providers. If new contracts are signed in the future to replace those that expire, these resources will once again be included in the state's capacity mix. The subsequent effects of these additions as well as recent changes are discussed throughout the text of this report.

Table 1. State of Florida: Proposed Capacity Additions As Reported on April 2, 2007^{5,6}

Unit Type	Winter Capacity Additions (MW)
Combined Cycle	12,973
Coal (subsequently canceled)	3,676
Integrated Coal Gasification (subsequently canceled)	905
Oil & Gas Fossil Steam	-674
Combustion Turbine & Diesel	1,738
Nuclear	1,305
Firm Purchases - IPP	-2,445
Firm Purchases - Interchange	-356
Firm Purchases - QF	-680
Firm Purchases - Renewables	-104
NET CAPACITY ADDITIONS	16,338

Figure 1. State of Florida: Electric Utility Capacity Mix As Reported on April 2, 2007⁵



⁵ Values for Coal and Integrated Coal Gasification are as filed on April 2, 2007, and thus contain many proposed generators which are no longer being constructed. Projections, considering the replacement of these generators, are discussed in Chapter 3.

⁶ Negative values reflect the retirement of fossil steam units and the expiration of firm capacity purchase contracts with other utilities and with independent power producers (IPPs), qualifying facilities (QFs), and renewable generators. As the term of existing contracts for purchased power from IPPs, QFs, and renewable generators expire, new contracts will most likely be signed. Hence, the actual contribution of these types of generators in the future to the state's capacity mix is likely to be significantly greater than shown in Table 1 and Figure 1.

3. FUEL DIVERSITY

BALANCED FUEL SUPPLY

Maintaining a balanced fuel supply is valuable in terms of supply reliability and price stability. The first step toward attaining fuel diversity is pursuing non-generating alternatives to new construction through cost-effective energy conservation and Demand Side Management (DSM) programs. DSM programs have reduced enough peak demand to avoid the construction of approximately ten 500 MW generating plants since the enactment of the Florida Energy Efficiency and Conservation Act (FEECA) in 1980.

Renewable energy provides another important alternative to traditional generating sources. The Commission continues to explore methods to encourage the development of renewable generation. Furthermore, recent nationwide initiatives and heightened societal awareness should increase the development of renewable energy facilities. Both DSM and renewable energy are discussed in greater depth in Chapter 4.

With the adoption of FEECA, coupled with state and federal efforts to strengthen building codes and appliance efficiency standards, much has been accomplished to reduce the growth rates of electrical demand and consumption in Florida. However, in spite of these efforts, the state's growing total energy demand continues to surpass current conservation, DSM, and renewable energy programs offered by Florida's utilities. This increasing demand results in a need for the addition of generation capacity to satisfy reliability requirements, subsequently leading to a greater dependence on liquid and natural gas fuels for energy generation.

Florida's increased dependence on natural gas has caused the state to be more vulnerable to supply disruptions due to severe storms and hurricanes. Such supply disruptions have caused severe price increases and power disruptions. Having a diverse fuel mix can mitigate the impacts of such events. Fuel diversity also serves as a risk mitigation strategy by providing a dampening effect on fuel price volatility caused by daily market conditions, thus allowing utilities to shield ratepayers from volatile price fluctuations.

Prior to the late 1970s, Florida's utilities used oil as the primary fuel source for generating electricity. Following the dramatic increase in oil prices in the 1970s, Florida's utilities made a concerted effort to add generating units that used solid fuels. One early response was the purchase of economical "coal-by-wire" from the Southern Company, which had a temporary surplus of coal-fired generation resources already constructed. The Commission supported the utilities' efforts to maintain fuel diversity with regulatory programs such as the Oil Backout Cost Recovery Factor, which gave utilities an incentive to recover costs of converting from oil-based generation, and the Energy Broker, a computerized system which matched buyers and sellers of economy energy to minimize the real time fuel costs of the participating utilities.

Prior to Congressional repeal of the Power Plant and Industrial Fuel Use Act in 1987, natural gas demand had declined substantially because of restrictions on usage as a boiler utility fuel. These restrictions contributed to a significant oversupply of gas, resulting in falling prices. Shortly after the repeal, a new era of highly efficient, flexible, environmentally preferred combustion turbine (CT) and

combined cycle (CC) units entered the market. The addition of these technologies by Florida's utilities fostered an increase in the use of natural gas to produce electricity.

Due to the state's continued increase in the demand for electricity and the relatively low natural gas prices during the 1990s, Florida's utilities continued to add gas-fired generating units to satisfy economic and reliability needs. Figure 2 illustrates Florida's energy demand increase and subsequent generation additions. As shown in Figure 3, these additions have resulted in an increase of natural gas generation from roughly 17.5 percent of the state's electricity in 2000 to 38 percent in 2006. Based on the 2007 Ten-Year Site Plans, the use of natural gas to satisfy demand is projected to increase to 45 percent of the state's energy production by 2016.

Figure 2. State of Florida: Energy Generation by Fuel Type (GWh)

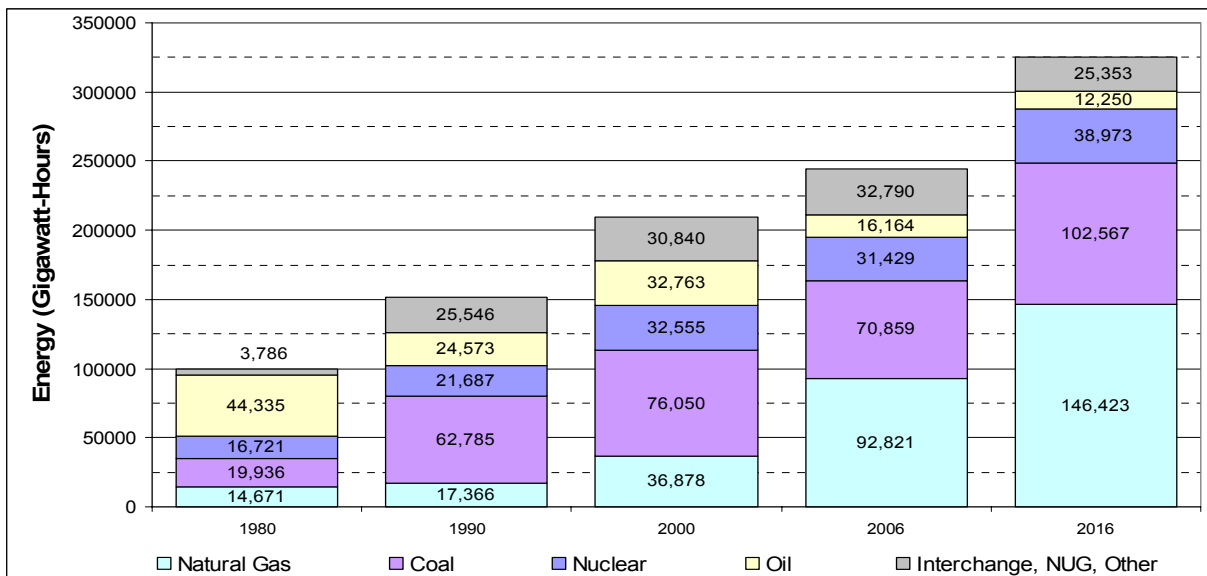
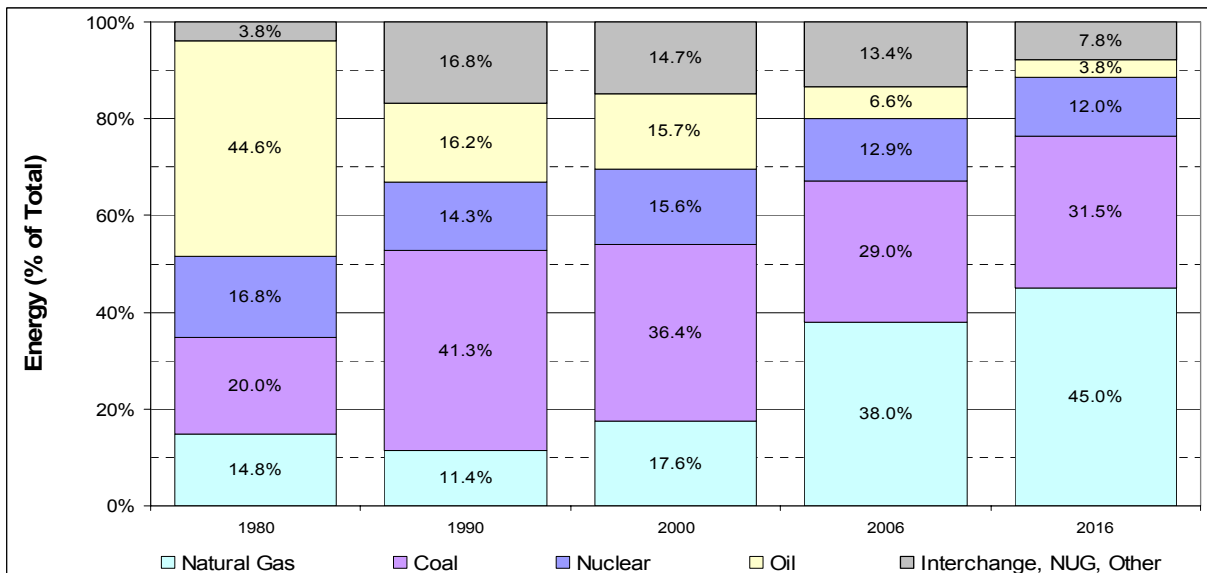
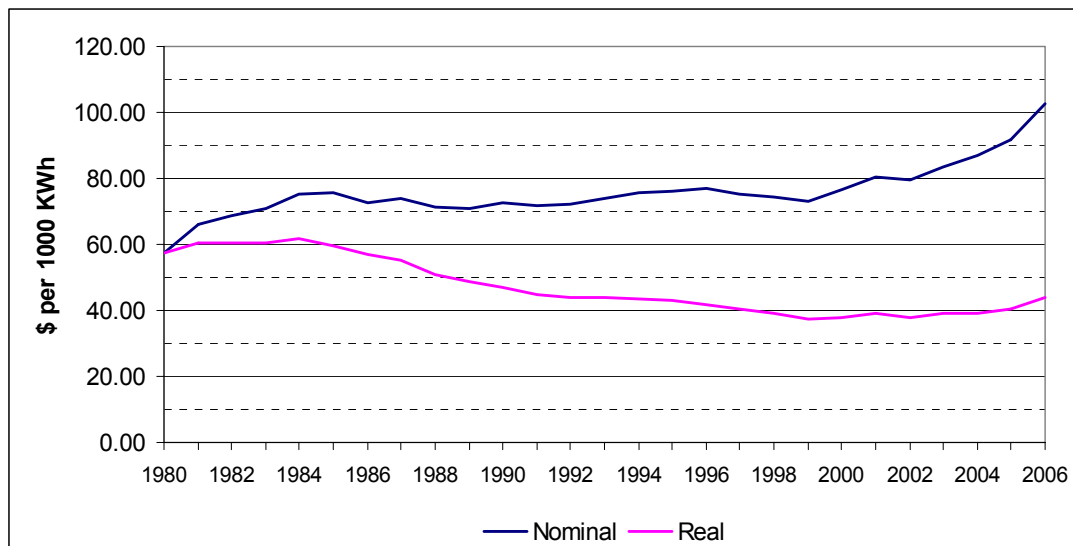


Figure 3. State of Florida: Energy Generation by Fuel Type (Percent of Total)



As shown in Figure 4, between 1980 and 2000, moderate fuel prices as well as a balanced planning approach used by Florida’s utilities resulted in relatively stable average electricity prices for Florida’s ratepayers with real (inflation-adjusted) prices actually declining.

Figure 4. Average Residential Electric Bill: 1980 to Present



Starting in 2001, natural gas prices began to increase nationwide despite electric utility forecasts of flat prices with moderate growth rates. For example, the actual cost of natural gas for FPL more than doubled between 2002 and 2006, rising from approximately \$4.06 per MMBtu in 2002 to \$8.81 per MMBtu in 2006. In 2005, hurricanes and tropical storms in the Gulf of Mexico caused short-term spikes as high as \$12 per MMBtu due to gas supply disruptions. The effects of higher, volatile gas prices can be dramatic on customer bills. Between 2003 and 2005, Florida’s IOUs experienced record fuel cost under-recoveries compared to forecasts. Under-recoveries of fuel costs totaled approximately \$670 million in 2003, \$353 million in 2004, and \$1.564 billion in 2005. The three years of higher than predicted fuel costs alone are approximately the same as the capital cost of a new coal-fired plant. The increase in natural gas prices, coupled with Florida’s growing dependence on natural gas generation, has reversed the trend of stable electricity prices as the average electric bill has increased in recent years, a trend illustrated in Figure 4 above.

Several uncertainties influence a utility’s decision to build a coal-fired power plant: capital costs, fuel price differentials, competitive fuel transportation, environmental compliance costs, and licensing requirements. These areas illustrate the complexity involved in the generation planning process. A key factor in a utility’s decision to build a new coal-fired plant is the number of years required for the plant to become cost-effective. Coal-fired plants have higher capital costs relative to natural gas plants. As the price difference between coal and natural gas increases, as has occurred in recent years, the amount of time before a coal-fired plant becomes cost-effective decreases. If the fuel price differential between natural gas and coal does not materialize, the higher fixed capital costs may negatively affect ratepayers for 30 or more years without realizing any fuel savings. Furthermore, the addition of several coal-fired power plants may require additional infrastructure in the form of rail facilities and shipping ports to support fuel transport, thus resulting in greater capital costs.

Environmental costs and concerns are increasing for all types of generating plants. Coal plants in particular have to overcome a high environmental hurdle. At the national level, discussions are underway for new emission requirements for substances such as mercury and carbon dioxide. Incremental environmental costs are a risk borne by ratepayers because Florida's IOUs are authorized to recover the costs of incremental environmental requirements through the Commission's Environmental Cost Recovery Clause.

Integrated Gasification Combined Cycle (IGCC), an advanced coal technology, has been purported to offer certain advantages with regard to level of emissions and emissions control, when compared to other coal technologies. However, IGCC technology is a relatively new technology requiring federal tax credits or construction subsidies to help mitigate high capital and operating costs. Furthermore, while advocates contend that the overall volume of greenhouse gas emissions will be lower for IGCC units, control technology for CO₂ capture and sequestration currently does not exist. TECO is the only utility in Florida operating an IGCC plant, Polk Unit 1, which generates 250 MW. A second IGCC unit at Polk was planned by TECO but has now been canceled due to economic and environmental uncertainty. Orlando Utilities Commission (OUC), in partnership with the Southern Company and with funding from the Department of Energy, received certification from the Siting Board to construct a 249 MW IGCC plant with an in-service date of 2010. On November 15, 2007, this unit was canceled in favor of a natural gas-fired combined cycle unit, also because of economic and environmental uncertainty.

Nuclear generation is one generating technology that produces no greenhouse gas emissions. Significant strides have been made nationally to bring this form of generation back to the forefront, including new standardized plant designs preapproved by the Nuclear Regulatory Commission (NRC) and streamlined safety and operating licensing to expedite construction. Nevertheless, it is expected that the licensing, certification, and construction of a new nuclear power plant in Florida will take approximately ten years or more. Coupled with extremely high capital costs, due in part to worldwide industrialization and demand for construction materials and labor, the commitment to the construction of new nuclear power plants entails its own set of financial risks. In an effort to mitigate the economic risks associated with the long lead time and high capital costs associated with nuclear power plants, the Florida Legislature enacted Section 366.93, Florida Statutes, in June 2006. The Florida Legislature directed the Commission to establish new rules to provide for early cost recovery mechanisms for costs related to the siting, design, licensing, and construction of nuclear power plants in Florida.⁷ Rule 25-6.0423, Florida Administrative Code, enacted April 8, 2007, fulfills the legislative mandate for nuclear power plant cost recovery.

Both FPL and PEF have announced plans to expand the capacity of their existing nuclear power plants and to construct new nuclear units. The Commission approved the need for an uprate to PEF's Crystal River 3 nuclear unit on February 8, 2007. On September 17, 2007, FPL filed a petition of need for uprates at their Turkey Point and St. Lucie nuclear facilities. On December 10, 2007, the Commission approved the need for the uprates of the FPL units. Combined, the uprates of the PEF and FPL units will add approximately 600 MW of additional nuclear capacity for the years 2009 through 2013. In addition to these uprates to existing units, PEF's Ten-Year Site Plan currently includes plans to construct a new 1,125 MW nuclear plant by 2016. PEF is expected to file a petition

⁷ In 2007, the Legislature amended Section 366.93, Florida Statutes, to include IGCC technology. The Commission is currently considering revisions to Rule 25-6.0423, Florida Administrative Code, to provide an alternative cost-recovery mechanism for IGCC plants.

for need determination in early 2008. On October 16, 2007, FPL filed a petition for determination of need for two new nuclear units, up to 1,500 MW each, for the years 2018 and 2020. If constructed and placed into service, these nuclear additions will help to provide further diversity to Florida's generation mix.

OUTLOOK

Over the past few years, the Legislature and the Commission have stressed the importance of utilities maintaining a balanced fuel supply. Florida's utilities responded to these concerns by proposing several solid fuel plants in their 2007 Ten-Year Site Plans. Such plans would have improved fuel diversity but would concurrently significantly increase capital costs that would be recovered from ratepayers and significantly increase carbon emissions.

The first of these planned additions to come before the Commission was OUC's IGCC unit, which was approved by the Commission in 2006 and subsequently received PPSA certification.⁸ This plant, currently under construction, was scheduled to be in service by 2010 providing 250 MW. The Department of Energy was to contribute \$235 million to this project as part of the Clean Coal Power Initiative. On November 15, 2007, OUC and its partner, the Southern Company, announced plans to cancel the IGCC unit in favor of only continuing construction of the gas-fired combined cycle portion of the project. The reason given for the change in plans were cost uncertainty associated with potential future carbon regulations.

In 2006, the Commission also approved the need for a 750 MW supercritical pulverized coal plant planned by SEC.⁹ This plant, originally scheduled for commercial operation in 2012, was denied certification by the Secretary of the DEP on August 15, 2007. SEC has appealed this decision.

In September 2006, a petition was jointly filed by FMPA, JEA, RCI, and TAL requesting Commission approval for a 765 MW pulverized coal plant to be located in Taylor County, with an in-service date of 2012. Following a formal hearing in January 2007, the Commission deferred consideration of staff's post-hearing recommendation to March 13, 2007. On March 9, 2007, the Applicants filed a motion for leave to submit supplemental testimony. On July 12, 2007, the Applicants filed a Notice of Withdrawal of this petition, and the docket was subsequently closed.¹⁰

On February 1, 2007, FPL filed a petition proposing to build two ultra-supercritical pulverized coal generating units rated at 980 MW each. The first unit was scheduled for service in 2013, and the second would follow in 2014. FPL maintained that benefits from the two units would include an increased reliability through fuel diversity and a reduction of risk from natural gas price volatility.

The Commission denied FPL's petition for need stating that "FPL has failed to demonstrate that the proposed plants are the most cost-effective alternative available, taking into account the fixed costs that would be added to base rates for the construction of the plants, the uncertainty associated with future natural gas and coal prices, and the uncertainty associated with currently emerging energy

⁸ Order No. PSC-06-0457-FOF-EC, issued May 24, 2006, in Docket No. 060155-EM, In re: Petition for Determination of need for proposed Stanton Energy Center Combined Cycle Unit B electrical power plant Orange County, by Orlando Utilities Commission.

⁹ Order No. PSC-06-0674-FOF-EC, issued August 7, 2006, in Docket No. 060220-EC, In re: Petition for determination of need for Seminole Generating Station Unit 3 electrical power plant in Putnam County, by Seminole Electric Cooperative, Inc.

¹⁰ Order No. PSC-07-0725-FOF-EU, issued September 5, 2007, in Docket No. 060635-EU, In re: Petition for determination of need for electrical power plant in Taylor County by Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee.

policy decisions at the state and federal level.”¹¹ Key in this decision was the fact that the Glades Power Plant was cost-effective in only 7 of 16 scenarios projected by FPL.

Currently TECO is the only utility in Florida operating an IGCC plant, Polk Unit 1, which generates 250 MW. On July 20, 2007, TECO filed a petition proposing the construction of the Polk Unit 6 IGCC generating plant rated at approximately 600 MW, with a commercial in-service date of 2013. TECO had been approved for a \$133.5 million dollar tax credit available through the Federal Energy Policy Act of 2005. However, on October 4, 2007, TECO withdrew its petition citing economic risks related to potential future CO₂ regulations pertaining to carbon capture and sequestration.¹²

As seen in Table 2, over 4,000 MW of proposed coal-fired capacity described in certain utility Ten-Year Site Plans have been canceled or denied certification.

Table 2. Summary of Proposed Coal Plants in 2007 TYSP

Owner(s)	Plant Name	Type	Winter Capacity (MW)	Year	Status
OUC	Stanton B	IGCC	249	2010	Gas Only
SEC	Palatka	BIT	750	2012	Certificate Denied by DEP ¹³
FMPA,JEA,TAL,RCI	Taylor Energy Center	BIT	768	2012	Need Petition Withdrawn
TECO	Polk Unit 6	IGCC	630	2013	Need Petition Withdrawn
FPL	Glades Power Park (I)	BIT	990	2013	Need Denied by PSC
FPL	Glades Power Park (II)	BIT	990	2014	Need Denied by PSC
SEC	Seminole Unit	BIT	340	2015	Not Yet Filed

As filed in its 2007 Ten-Year Site Plan, PEF plans an addition of over 1,300 MW from nuclear generation. The Crystal River Unit 3 will be uprated by 40 MW in 2009 and by 140 MW in 2011; the Crystal River Unit 3 uprate was granted a need determination in February 2007.¹⁴ PEF also expects to bring on line in 2016 an advanced light water reactor to provide 1,125 MW of generation. A determination of need for this unit should be filed in early 2008.

Information provided by FPL in the context of the August 15, 2007, workshop indicates that by 2012, the company expects to uprate existing nuclear generating plants to gain 400 MW of increased capacity. FPL also discussed the construction of two new nuclear power units providing a combined capacity of 3,000 MW with target dates of 2018 and 2020. The 400 MW of uprates and the new nuclear generators, which would improve fuel diversity and reduce the percentage energy

¹¹ Order No. PSC-07-0557-FOF-EI, issued July 2, 2007, page 4, in Docket No. 070098-EI, In re: Petition for determination of need for Glades Power Park Units 1 and 2 electrical power plants in Glades County, by Florida Power & Light Company.

¹² Order No. PSC-07-0877-FOF-EI, issued October 31, 2007, in Docket No. 070467-EI, In re: Petition to determine need for Polk Unit 6 electrical power plant, by Tampa Electric Company.

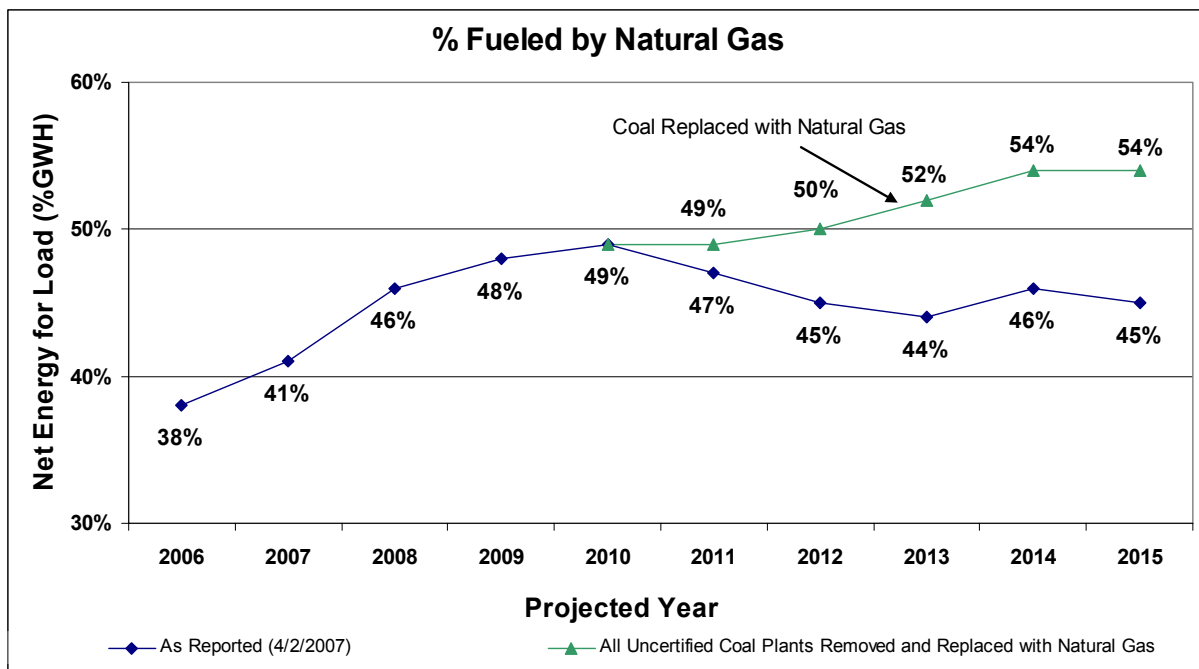
¹³ SEC has appealed the denial.

¹⁴ Order No. PSC-07-0119-FOF-EI, issued February 8, 2007, Docket No. 060642-EI, In re: Petition for determination of need for expansion of Crystal River 3 nuclear power plant, for exemption from Bid Rule 25-22.082, Florida Administrative Code, and for cost recovery through fuel clause, by Progress Energy Florida, Inc.

generated by natural gas, were not filed in FPL's 2007 Ten-Year Site Plan. On September 17, 2007, FPL filed a petition for determination of need of the aforementioned uprates. On December 10, 2007, the Commission approved the need for the uprates of the FPL units. On October 16, 2007, FPL filed a petition for a determination of need for the two new nuclear units. A hearing for these units is scheduled for January 30-February 1, 2008.

Removal from consideration of the earlier mentioned coal plants leaves a void of necessary capacity additions. Due to the long permitting and construction periods involved with nuclear generating plants, significant additional generation from a new nuclear plant would not be expected until 2016. Alternatively, gas generators have a relatively short lead time making gas generation the most feasible option to fill the void left by canceled coal projects. The effects from denied and/or canceled coal plants will be reflected in the 2008 Ten-Year Site Plans. An estimate of the impacts from the increase in gas usage was provided by the FRCC at the August 15, 2007, workshop and is depicted in Figure 5 below.

Figure 5. Projected Peninsular Florida Generation by Natural Gas



CONCLUSION

As per capita use and total demand for electricity continue to outpace increased energy conservation, DSM, and renewable generation efforts, the need for traditional generating capacity continues to grow. Over the last 20 years, Florida's utilities have turned to natural gas to satisfy the state's growing energy demand. The recent volatility of natural gas prices, however, has shown that the overdependence on a single fuel can lead to an unacceptable risk of supply disruptions and rate increases. Unfortunately, fuel diversity cannot be achieved overnight. Utilities must address several issues and concerns before constructing a solid fuel generator. Solid fuel units raise environmental concerns despite the fact that these units meet or exceed stringent emissions requirements for currently regulated pollutants. Solid fuel units also require large plant sites in order to accommodate fuel transport infrastructure for coal sites and waste fuel facilities for nuclear sites. Additional issues include a site's feasibility for multiple fuel usage, such as the ability to convert an existing gas-fired plant to coal gasification in the future if such conversion becomes cost-effective. Solid fuel plants require long lead times, as much as seven years for a coal plant and ten or more years for a nuclear plant, for regulatory approval and construction. With the removal from consideration of recently proposed coal plants, the remaining baseload generation choice is likely to be natural gas for the next several years.

As the state's dependence on natural gas-fired generation continues to grow, gas supply and deliverability become increasingly important. Therefore, utilities should continue evaluation of natural gas supply and delivery options, such as liquefied natural gas, alternate gas pipelines, and natural gas storage. Having multiple options can serve as risk mitigation to unforeseen supply and delivery disruptions.

4. GENERATION

LOAD AND ENERGY FORECAST

A utility's load and energy forecast is the starting point for determining the timing and size of new capacity additions needed to reliably serve load. As such, forecast accuracy plays an essential role in a utility's determination of future needs. For 8 of the 10 reporting utilities, the Commission reviewed the historical forecast accuracy of total retail energy sales for the five-year period from 2002-2006. Insufficient historical data were available to analyze the historical forecast accuracy of FMPA and OUC. The Commission's analysis compared actual energy sales for each year to energy sales forecasts made three, four, and five years prior. For example, actual 2006 energy sales were compared to 2006 forecasts made in 2001, 2002, and 2003. These differences, expressed as a percentage error rate, were used to calculate two measures of a utility's historical forecast accuracy: average forecast error¹⁵ and average absolute forecast error.¹⁶

Table 3 shows the historical forecast accuracy of total retail energy sales for the 2005, 2006, and 2007 Ten-Year Site Plans for the eight reporting utilities with sufficient historical data. Overall forecast errors over the last three years have steadily decreased.

Table 3. Total Retail Energy Sales: Historical Forecast Accuracy

UTILITY	FORECAST ERROR (%)	
	AVERAGE	AVERAGE ABSOLUTE
Progress Energy Florida	-0.39	0.69
Florida Power & Light Company	-1.27	1.27
Gulf Power Company	-0.34	0.69
Tampa Electric Company	-0.23	0.35
JEA	0.77	0.93
City of Lakeland	0.21	0.58
City of Tallahassee	-0.11	0.52
Seminole Electric Cooperative	-1.16	1.49
WEIGHTED AVG (2002-2006) - 2007 TYSP	-0.28	0.80
WEIGHTED AVG (2001-2005) - 2006 TYSP	-0.29	0.88
WEIGHTED AVG (2000-2004) - 2005 TYSP	-0.41	1.02

¹⁵ Average forecast error indicates a utility's tendency to overforecast (positive values) or underforecast (negative values).

¹⁶ Average absolute forecast error accumulates the magnitude of past forecast errors, ignoring positive and negative signs.

DEMAND-SIDE MANAGEMENT

Demand-side management (DSM) reduces customer peak demand and energy requirements, resulting in the deferred need for new generating units. Dispatchable DSM, such as load management and interruptible service, are utility-controlled measures that allow quick reductions in system peak demand when needed. Non-dispatchable DSM, such as ceiling insulation or building efficiency measures, enables utilities and customers to realize sustained energy savings over time. Non-dispatchable DSM savings are embedded in a utility's demand and energy forecast.

Utilities have offered DSM programs since 1980 based on the requirements of the FEECA. FEECA emphasizes reducing the growth rate of weather-sensitive peak demand, reducing and controlling the growth rate of electricity consumption, and reducing the consumption of expensive resources such as petroleum fuels. To meet these objectives, the Commission sets numeric conservation goals, and utilities are responsible for continuing to develop and implement DSM programs to meet these goals. The Commission's broad-based authority over electric utility conservation measures and programs is contained in Rules 25-17.001 through 25-17.015, Florida Administrative Code. Florida's utilities have reduced enough peak demand to avoid the construction of approximately ten 500 MW generating plants since the enactment of FEECA.

DSM Goals and Plans

FEECA requires that all IOUs and any municipal or cooperative utility with annual energy sales of at least 2,000 GWh as of July 1, 1993, meet numeric conservation goals set by the Commission. Seven Florida utilities are subject to FEECA: PEF, FPL, GULF, TECO, Florida Public Utilities Company (FPUC),¹⁷ JEA, and OUC.

The Commission last set numeric demand and energy goals for these seven utilities in July 2004. The new numeric goals were generally lower than the previous goals set by the Commission in 1999 for the following reasons:

- The Florida Building Code contains increased minimum energy efficiency levels, thus limiting the amount of incremental savings from utility sponsored programs.
- Many utility DSM programs have reached a saturation in participation levels.
- The cost of new generating units had declined, which reduced the cost-effectiveness of several DSM programs. However, the Commission has seen this trend begin to reverse.

The US Department of Energy (DOE) has revised the efficiency standards for air conditioning equipment for residential and commercial applications. The new standards took effect on January 23, 2006. Currently, all residential central air conditioners manufactured must have a seasonal energy efficiency rating (SEER) of 13 or higher. Similar efficiency improvements are required for other appliances and for various commercial equipment. These recent revisions to the efficiency standards required the FEECA utilities to modify their residential and business demand-side management programs related to heating, ventilation, and air conditioning (HVAC). FPL, PEF, TECO, and GULF have received Commission approval for modifications to their DSM programs addressing the SEER

¹⁷ FPUC is a non-generating, investor-owned utility subject to FEECA's requirements.

increases. These program modifications also include greater customer incentives to help maintain the same level of customer participation.

Each February, the Commission publishes an annual report describing the utilities' conservation and DSM activities pursuant to FEECA.¹⁸ Included in the Commission's report is a summary of all utility DSM programs, a comparison of current and previous numeric goals, and a general assessment of utility conservation activities. Overall, Florida's utilities have been successful in meeting the overall objectives of FEECA. Since the enactment of FEECA, utility conservation programs have resulted in cumulative statewide peak demand savings of 5,332 MW for summer and 5,655 MW for winter, as well as annual energy savings of 6,269 GWh for 2007.

Overall, demand and energy savings from utility-sponsored conservation programs are expected to surpass current goals by as much as 50 percent. Furthermore, the projected average annual growth rate of DSM program savings, as illustrated in Table 4, has increased, reflecting the effectiveness and success of current programs. The Commission will continue to explore means of cost-effectively increasing the amount of DSM savings available from utility conservation programs.

Table 4. Projected Growth Rates of DSM Savings

	AVERAGE ANNUAL GROWTH RATE (%)	
	DSM PROGRAM SAVINGS	
	2006	2007
Summer Peak Demand	2.20%	3.01%
Winter Peak Demand	1.62%	2.43%
Net Energy For Load	2.47%	2.93%

DSM programs are projected to increase summer peak demand savings from just over 5,600 MW of capacity in 2007 to nearly 7,500 MW of capacity in 2016. Similarly, winter peak demand savings are projected to increase from 6,100 MW of capacity in 2007 to over 7,500 MW of capacity in 2016. The projected demand savings of more than 1,000 MW of peak capacity for both summer and winter are significant in the deferral of traditional generation. These savings, in addition to non-peak demand savings, translate to net energy savings of more than 9,000 GWh in 2016, an increase of more than 2,000 GWh over the planning period.

Figures 6, 7, and 8 on the next page illustrate, in greater detail, the projected total amounts of annual energy consumption, summer peak demand, and winter peak demand savings from utility-sponsored DSM programs over the ten-year planning horizon.

¹⁸ Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act, February 2006.

Figure 6. State of Florida: DSM Net Energy for Load Savings

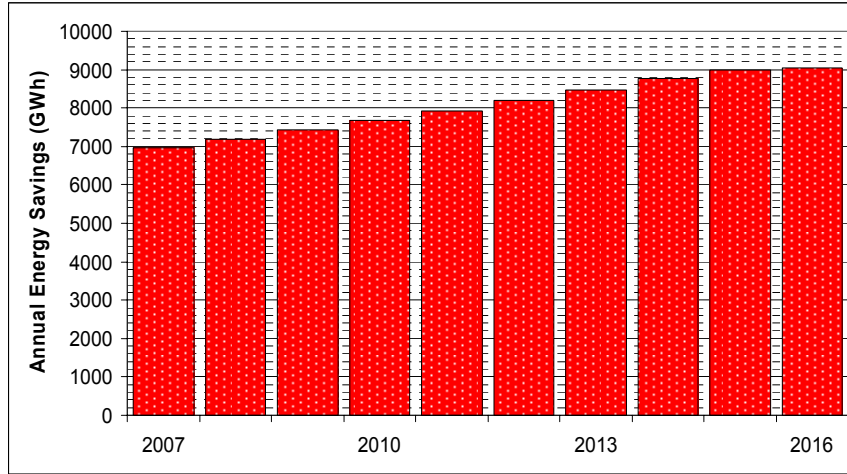


Figure 7. State of Florida: DSM Summer Peak Demand Savings

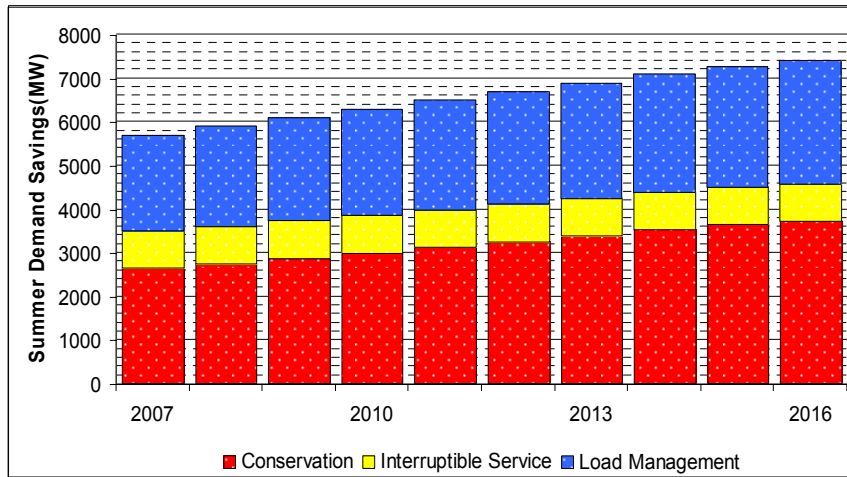
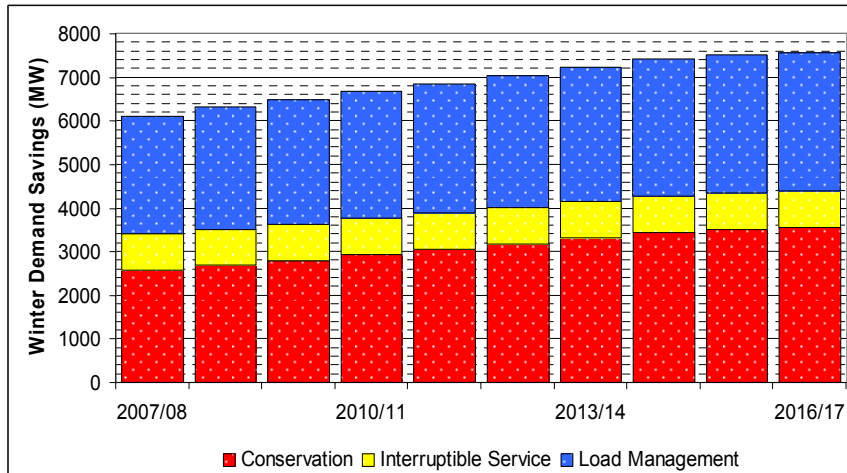


Figure 8. State of Florida: DSM Winter Peak Demand Savings



On June 15, 2007, TECO petitioned the Commission to modify 9 existing programs and approve 12 new programs. Both of these actions should increase customer participation and reduce peak demand by approximately 66 MW over the planning horizon. These savings are not reflected in current filings but will be accounted for in the 2008 Ten-Year Site Plans.

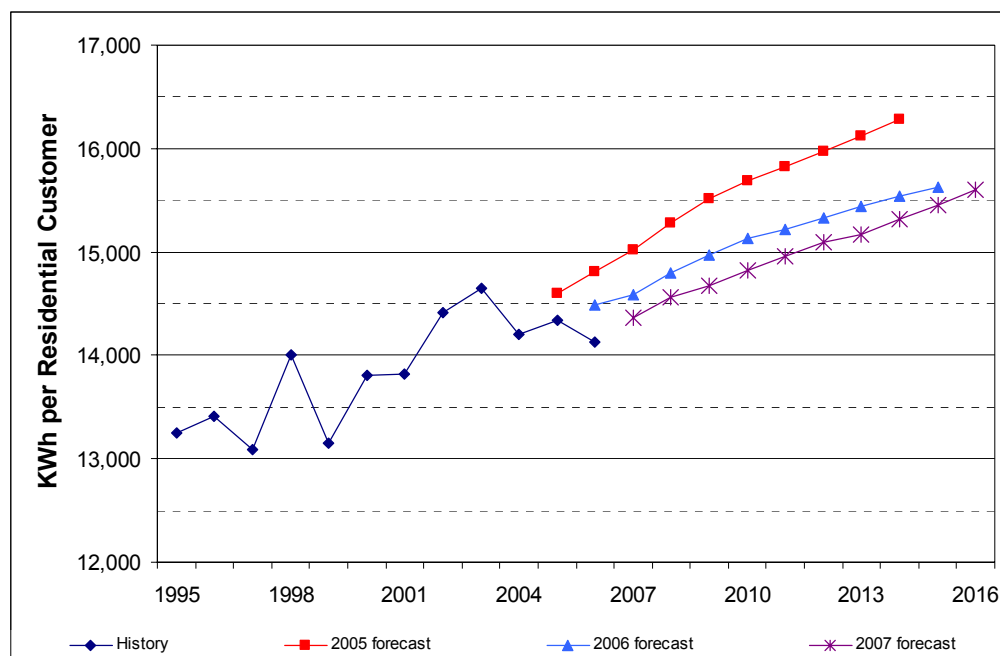
Consumer Demand

For residential customers, per capita energy consumption has increased over the past ten years. This trend is expected to continue to rise during the planning horizon. Possible reasons for these increases include the following explanations:

- Average home size continues to grow over time.
- Today’s homes have more, and larger, electricity-consuming appliances than in past years.
- Natural gas, used by many residents nationwide for heating, water heating, and cooking, is still relatively unavailable in parts of Florida.
- Per capita income has risen since the mid-1980s, while electric rates remained stable between 1980 and 2000, as shown previously in Figure 3, resulting in more affordable electricity.

Figure 9 shows that the statewide per capita energy consumption usage increased an average of 0.75 percent per year over the past ten years. Forecasts for the next ten years project an average growth rate of 0.84 percent per year. The 2007 forecast of per capita residential energy consumption is lower than comparable period forecasts made in 2005 and 2006 due in part to the improved DSM savings discussed earlier.

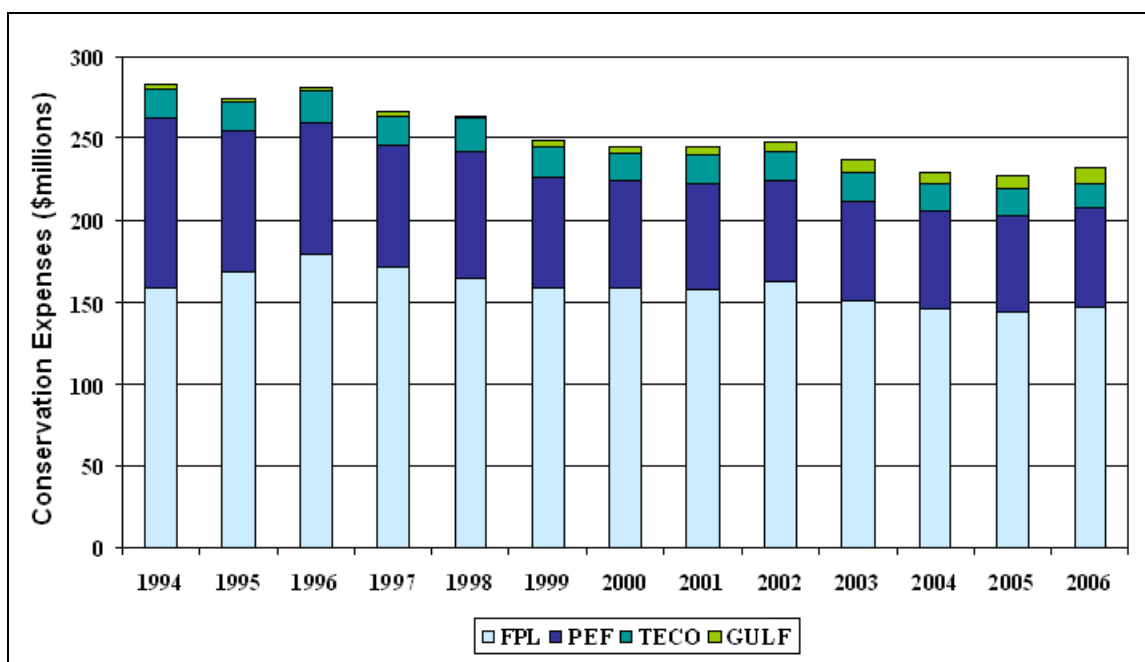
Figure 9. State of Florida: Energy Consumption per Residential Customer



Energy Conservation Cost Recovery

IOUs have the opportunity to recover prudently incurred expenditures associated with Commission-approved DSM programs through the Energy Conservation Cost Recovery Clause (ECCR). Since 1981, Florida's IOUs have collected approximately \$4.61 billion through the ECCR clause, with nearly \$2.45 billion of that amount recovered in the last ten years. As illustrated in Figure 10, annual ECCR expenditures have stabilized at just under \$237 million per year in recent years for two primary reasons: DSM programs have reached saturation in participation levels, and DSM program cost-effectiveness declined due to the relatively lower cost of new generating units. However, this trend is beginning to reverse. With increased avoided cost, DSM program cost-effectiveness should improve, and expenditures, for DSM programs may increase.

Figure 10. Conservation Expenses for IOUs



While Florida's utilities have been successful overall in meeting the objectives of FEECA, the Commission believes that customer choice plays a role in helping the state's utilities achieve the overall goals of FEECA. Electric customers can contribute to meeting these goals through buying smaller homes; owning energy-efficient appliances including air conditioning systems; making energy-efficiency improvements to their homes to reduce energy losses; and taking advantage of natural gas for heating, water heating, and cooking where available and cost-effective. As plant sites and transmission corridors grow more and more scarce, utility efforts to defer future generating units and transmission lines becomes increasingly important. Customer participation in utility offered DSM and energy conservation programs are paramount in such efforts.

RENEWABLE ENERGY

Currently in Florida, over 1,100 MW of renewable generation facilities are fueled by biomass, hydroelectric sources, waste heat, landfill gas, and municipal solid waste. Florida's electric utilities purchase just over 500 MW of firm capacity from these renewable energy sources which can defer the need for utilities to construct power plants. The majority, approximately 380 MW, is fueled by municipal solid waste.

Renewable energy facilities also produce over 610 MW of non-firm capacity for internal use (self-service) or for sale to utilities on an as-available basis. As a result, the state's utilities do not count on this non-firm energy for reliability purposes; however, this energy can give a utility the ability to avoid burning fossil fuels from existing generators. The primary contributors to this category are biomass and waste heat. Figures 11 and 12 illustrate the current renewable generation mix by fuel type as reported by the utilities. Figures 13 and 14 illustrate current renewable generation by utility. Comprehensive lists of both firm and non-firm renewable generators are listed on Tables 5 and 6 on the following pages.

Figure 11. Firm Capacity Renewable Energy Sources by Fuel Type (507.2 MW)

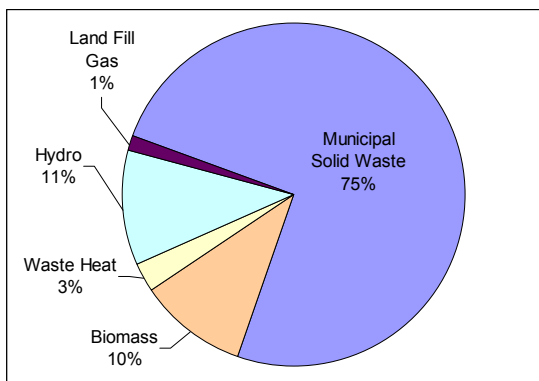


Figure 12. Non-Firm Renewable Energy Sources by Fuel Type (615.8 MW)

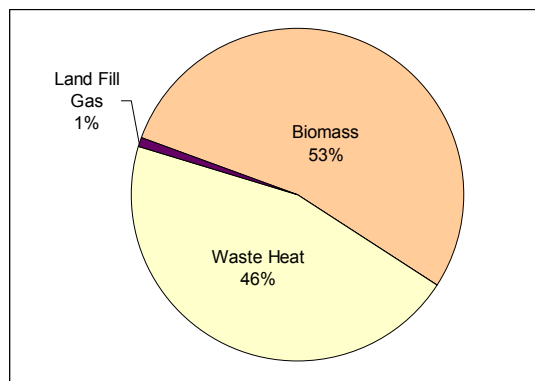


Figure 13. Firm Capacity Renewable Energy Sources by Utility

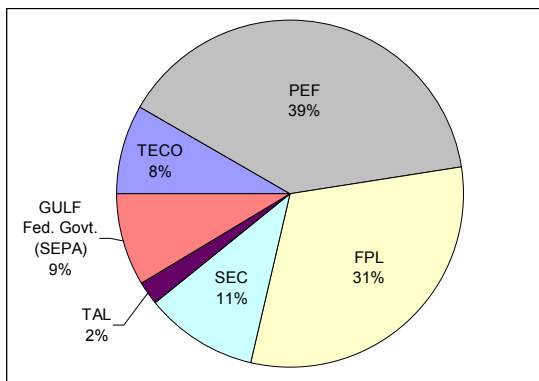


Figure 14. Non-Firm Renewable Energy Sources by Utility

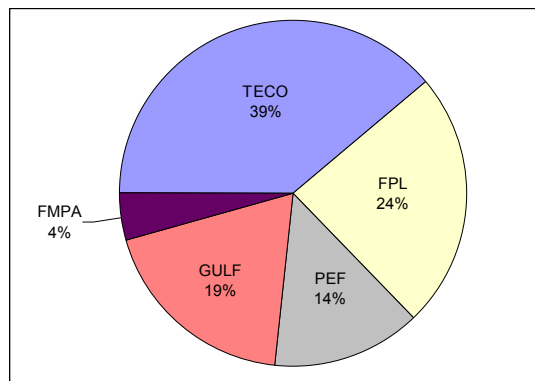


Table 5. State of Florida: Renewable Energy Sources Providing Firm Capacity

Utility	Facility	Fuel Type	Capacity (MW)
FPL	Broward North	MSW	56.0
FPL	Broward South	MSW	54.1
FPL	Palm Beach County	MSW	47.5
PEF	Bay County Res. Recov.	MSW	11.0
PEF	Dade County Res. Recov.	MSW	43.0
PEF	Lake County Res. Recov.	MSW	12.8
PEF	Pinellas County Res. Recov.	MSW	23.0
PEF	Pasco County Res. Recov.	MSW	54.8
TECO	City of Tampa Refuse Energy	MSW	19.0
TECO	Hillsborough City Refuse Energy	MSW	22.9
SEC	Lee County Res. Recov.	MSW	35.0
MUNICIPAL SOLID WASTE SUBTOTAL			379.1
PEF	Ridge Generating Station	Biomass	39.6
SEC	Timber Energy	Biomass	12.0
BIOMASS SUBTOTAL			51.6
PEF	Cargill	WH	15.0
WASTE HEAT SUBTOTAL			15.0
TAL	C.H. Corn Dam	Hydro	11.0
GULF-Fed. Govt. (SEPA)	Jim Woodruff Dam	Hydro	43.5
HYDRO SUBTOTAL			54.5
SEC	Bioenergy	LFG	7.0
LANDFILL GAS SUBTOTAL			7.0
TOTAL FIRM CAPACITY RENEWABLES			507.2

Several firm capacity renewable contracts are slated for expiration within the ten-year site plan period. If all of these contracts are not renewed, the total of the firm capacity will be reduced by more than 250 MW.

Table 6. State of Florida: Self-Service and Non-Firm Renewable Energy Sources

Utility	Facility	Fuel Type	Capacity (MW)
FPL	Tomoka Farms	LFG	3.8
TECO	City of Tampa Sewage	LFG	1.4
LANDFILL GAS SUBTOTAL			5.2
PEF	Potash of Saskatchewan	WH	42.0
TECO	Millpoint	WH	41.3
TECO	Ridgewood	WH	55.0
TECO	CF Industries	WH	33.1
TECO	Greenbay	WH	28.2
TECO	New Wales	WH	46.1
TECO	South Pierce	WH	34.9
WASTE HEAT SUBTOTAL			280.6
FPL	Georgia Pacific	Biomass	52.0
FPL	Okeelanta	Biomass	70.0
FPL	US Sugar-Bryant	Biomass	20.0
PEF	Jefferson Power	Biomass	6.0
PEF	Proctor & Gamble (Buckeye)	Biomass	38.0
FMPA	US Sugar Corporation	Biomass	27.0
GULF	International Paper Company	Biomass	78.0
GULF	Stone Container	Biomass	39.0
BIOMASS SUBTOTAL			330.0
TOTAL NON-FIRM ENERGY RENEWABLES			615.8

Despite providing over 1,100 MW of capacity, renewable energy facilities do not account for a large portion of Florida's energy generation. Historically, relatively high capital and operating costs as well as limited applications have hampered the development of renewable energy in the state. Table 7 lists the reporting utilities that rely upon renewable energy sources for greater than 1 percent of their total net energy for load.

Table 7. Contribution of Renewable Energy to Net Energy for Load¹⁹

Utility	2001	2002	2003	2004	2005	2006
Progress Energy Florida	3.5%	3.4%	3.3%	3.1%	2.8%	3.0%
Seminole Electric Cooperative	2.6%	2.4%	2.2%	2.4%	2.7%	2.6%
Tampa Electric Company	1.7%	1.9%	1.8%	1.7%	2.2%	2.4%
Orlando Utilities Commission	1.7%	1.7%	1.6%	1.6%	1.6%	1.5%
Florida Power & Light Company	1.4%	1.5%	1.5%	1.5%	1.4%	1.5%

Throughout the state, utility-owned self generation projects produce more than 15 MW of capacity using landfill and sewer gas. The bulk of this capacity, 10 MW, comes from the OUC Stanton Landfill with other significant contributions coming from JEA and FMPA. Several of the reporting utilities are also active in photovoltaic and solar thermal projects. Many of these projects are associated with programs such as Solar for Schools and SunSmart Schools in which a solar array is placed on school grounds, allowing students to experience firsthand the benefits of renewable generation. The utilities' photovoltaic and solar thermal projects combine to produce nearly 0.5 MW of capacity. Six of the reporting utilities have customers who own photovoltaic (PV) systems and are interconnected to the grid. The totals of these systems, listed in Table 8, reflect an average capacity factor of close to 10 percent.

Table 8. PV Interconnection Summary

Utility	Number of Connections	MW	MWH	Capacity Factor
PEF	61	0.362	528.5	17%
FPL	31	0.108	80.7	9%
TECO	6	0.018	3.0	2%
GULF	1	0.005	3.3	8%
OUC	4	0.020	Not Reported	N/A
SEC	2	0.004	Not Reported	N/A
TOTAL	105	0.516	615.5	9% (avg.)²⁰

¹⁹ GULF, FMPA, GRU, JEA, and LAK reported a contribution of less than 1 percent.

²⁰ Average Capacity Factor does not include OUC and SEC.

Based on the April 2, 2007, Ten-Year Site Plans, several renewable generation projects are proposed to be in service within the next five years. These projects will produce nearly 300 MW of capacity. Table 9 summarizes these projects, some of which are still in contract negotiations. FPL has recently announced that it is pursuing a wind project, up to approximately 20 MW, in St. Lucie County and as much as 300 MW of solar powered generating capacity. However, the company has not provided estimates of in-service dates or cost-effectiveness analyses for these facilities.

Table 9. Future Renewable Projects

Utility	Fuel Type	Capacity (MW)
PEF	E-Grass	116.60
	Biomass Wood	75.00
	LFG	11.00
TECO	WH	35.00
	Solid Waste	16.00
	Solar	0.20
JEA	LFG	9.60
LAK	Solar	18.00
	Solar	6.00
OUC	MSW	20.00
	LFG	Undetermined
FPL	Solar	0.25
	Solar	0.04
GRU	PV	0.25
TOTAL		307.94

Legislative and Commission Actions to Encourage Renewables

The 2005 Florida Legislature enacted Section 366.91, Florida Statutes, requiring that FEECA utilities continuously make available a standard offer contract for purchase of capacity and energy from renewable energy resources. The 2006 Florida Legislature sought to further encourage the development of renewable generation in Florida by enacting Section 366.92, Florida Statutes, authorizing the Commission to adopt appropriate goals to increase the use of existing and new renewable energy resources in the state. Both statutes were intended to protect the economic viability of existing renewable energy facilities while promoting further development of renewable energy resources in the state.

Standard Offer Contracts for Renewables

In December 2006, the Commission adopted Rules 25-17.200 through 25-17.310 Florida Administrative Code, which became final in March 2007. These rules implement Section 366.91, Florida Statutes, requiring each utility to continuously offer a separate contract for each type of fossil fuel technology that is included in the Ten-Year Site Plan. The required standard offer contracts were filed by Florida's investor-owned utilities on April 1, 2007, and approved by the Commission on May 22, 2007. The contracts result in a continuous offer to purchase approximately 2,400 MW of renewable capacity and energy. On July 2, 2007, the orders approving the standard offer contracts for PEF, FPL, and TECO were protested. A hearing to address the protest will likely be held in early 2008.

Net Metering and Interconnection Rules

Current Commission rules require investor-owned utilities to interconnect with photovoltaic systems rated at 10 kW or less. Net metering, which allows a meter to turn backward as interconnected customers generate their own electricity, is allowed but not required.

In April 2007, the Commission staff conducted a workshop to explore whether net metering should be required, and if so, for what size and type of renewable generators. Representatives of the renewable industry stated that net metering would provide a significant incentive for customers to install renewable generators, such as photovoltaic systems. The workshop also explored methods to expedite the interconnection of larger customer-owned renewable generators, including technologies in addition to photovoltaic systems.

Following the April workshops, the staff reviewed comments of the parties and began drafting a rule which addressed both the interconnection and net metering of renewable generators. The draft rule would expand the Commission's existing policy by requiring the expedited interconnection of customer-owned renewable generators. The draft rule would also enhance the Commission's existing policy on net metering to further encourage renewable development. The draft rule was provided to interested persons and discussed at an August 30, 2007, Commission rule development workshop. Comments from the workshop were considered, and a staff workshop was held October 15, 2007, to further develop the draft rule. On December 18, 2007, the Commission proposed a net metering and interconnection rule that would apply to all renewable generation technologies up to 2 MW in size, expedite the interconnection of customer-owned renewable generation, and allow customers to offset their consumption through net metering. Comments on the proposed rule must be filed by January 25, 2008.

Renewable Portfolio Standard (RPS) for Florida

To begin the process of developing renewable energy goals or an RPS, the Commission held a workshop on July 26, 2007, in which more than 30 speakers from renewable industries, electric utilities, and government entities gave presentations. Speakers discussed the feasibility and achievability of a wide array of renewable technologies, both proven and unproven, ranging from solar and wind technology to ocean current technology.

On August 23, 2007, the Commission's staff conducted a follow-up workshop to continue discussion on specific issues relevant to the development and implementation of an RPS for Florida. Participants included representatives of electric utilities, renewable developers, environmental organizations, and government entities. The workshop focused on the goals, objectives, applicability, structure, resources eligible for inclusion, and the role of renewable energy credits in an RPS.

A staff workshop held on September 27, 2007, focused on issues relating to compliance and enforcement. A representative for the U.S. Environmental Protection Agency's state outreach efforts provided an overview of compliance and enforcement policies in other states.

On December 6, 2007, staff held a workshop to address, in more detail, matters pertaining to provisions such as carve-outs²¹ and set-asides,²² which can be used to encourage the use of specific renewable energy resources. Additional discussion will cover the establishment and monitoring of goals as well as multipliers,²³ which can be used to aid utilities in achieving renewable goals.

²¹ Carve-out: Allotting a specific percentage of generation to one type of generation.

²² Set-aside: Allocating a specific capacity for generation by a specific type of generation.

²³ Multiplier: Allowing a capacity or percentage of renewable generation to be multiplied by a determined number in order to enhance results.

PROPOSED GENERATING UNITS REQUIRING CERTIFICATION

To require certification under Florida's PPSA, a proposed generating unit addition must be at least 75 MW of steam-fired generating capacity. The Commission has granted a Determination of Need for several generating units in recent years. Many of these facilities have received certification under the PPSA by Florida's Governor and Cabinet. Table 10 lists all proposed generating units in the 2007 Ten-Year Site Plans that meet the criteria for requiring certification under the PPSA. Solid fuel units are shown in ***BOLD ITALIC CAPS***.

Table 10. Proposed Generating Units Requiring Certification

UTILITY	GENERATING UNIT NAME & TYPE	WINTER CAPACITY (MW)	DATES		
			NEED APPROVED (Commission)	PPSA CERTIFIED (DEP)	IN-SERVICE
FPL	Turkey Point CC Unit 5	1181	Jun-04	Feb-05	Jun-07
PEF	Hines CC Unit 4	517	Nov-04	Jun-05	Dec-07
FMPA	Treasure Coast Energy Center CC Unit 1	318	Jul-05	May-06	Jun-08
FPL	West County Energy Center CC Unit 1	1335	Jun-06	Dec-06	Jun-09
FPL	West County Energy Center CC Unit 2	1335	Jun-06	Dec-06	Jun-10
<i>OUC</i>	<i>STANTON UNIT B²⁴</i>	<i>275</i>	<i>Jun-06</i>	<i>Dec-06</i>	<i>Jun-10</i>
<i>SEC</i>	<i>SEMINOLE UNIT 3</i>	<i>750</i>	<i>Jul-06</i>	<i>Denied (Jul-07)²⁵</i>	<i>May-12</i>
<i>FMPA / JEA RCI / TAL</i>	<i>TAYLOR ENERGY CENTER PC UNIT</i>	<i>768</i>	<i>Withdrawn (Jul-07)</i>		<i>Jun-12</i>
<i>FPL</i>	<i>FLORIDA GLADES POWER PARK 1</i>	<i>990</i>	<i>Denied (Jul-07)</i>		<i>Jun-12</i>
<i>TECO</i>	<i>POLK UNIT 6</i>	<i>630</i>	<i>Withdrawn (Oct-07)</i>		<i>Jan-13</i>
<i>FPL</i>	<i>FLORIDA GLADES POWER PARK 2</i>	<i>990</i>	<i>Denied (Jul-07)</i>		<i>Jun-13</i>
SEC	Unnamed CC	180			Dec-10
FMPA	Cane Island 4	318			Jun-11
PEF	Combined Cycle	618			Jun-13
SEC	Unnamed CC	720			Dec-13
GULF	Unlocated Unit	620			Jun-14
SEC	Unnamed CC	180			Dec-14
PEF	Combined Cycle	618			Dec-14
FPL	South Florida CC	1335			Jun-15
<i>SEC</i>	<i>UNNAMED BASE</i>	<i>340</i>			<i>Dec-15</i>
<i>PEF</i>	<i>UNNAMED NUCLEAR</i>	<i>1125</i>			<i>Jun-16</i>
TOTAL REQUIRING CERTIFICATION		6054			

²⁴ On November 15, 2007, OUC announced that it would continue with the gas only portion of this generating unit.

²⁵ Seminole Unit 3 (750 MW) was denied certification by the Department of Environmental Protection. Seminole has appealed this decision and a final decision has not been reached.

5. TRANSMISSION PLANS

As generation capacities increase, the transmission system must grow accordingly in order to maintain the capability of delivering the energy to the end user. The Commission has been given broad authority under certain sections of Chapter 366, Florida Statutes, known as the Grid Bill, to require reliability within Florida's coordinated electric grid and to ensure the planning, development, and maintenance of adequate generation, transmission, and distribution facilities within the state.

RELIABILITY STANDARDS

Nationwide, electric utilities plan their bulk power systems (100 kV and above) to comply with North American Electric Reliability Corporation (NERC) and regional reliability standards. NERC's mission is to ensure that the bulk electric system in North America is reliable, adequate, and secure. Since its formation in 1968, NERC operated successfully as a self-regulatory organization, and the electric industry voluntarily complied with NERC reliability standards. However, changes in the electric industry have rendered the voluntary compliance system inadequate. In response to these industry changes, Congress required the Federal Energy Regulatory Commission (FERC) to develop a new mandatory system of reliability standards and compliance. The Energy Policy Act of 2005 authorized the creation of an electric reliability organization (ERO) with the statutory authority to enforce compliance with reliability standards among all market participants. NERC received certification as the ERO from the FERC in July 2006.

NERC works with all stakeholder segments of the electric industry, including electricity users, to develop standards for the reliable planning and operation of the bulk power systems. Fundamentally, a power system should always operate in such a way that no credible contingency could trigger cascading outages or another form of instability. Reliability standards are generally applied as follows:

- Under a single-contingency criterion, a utility's transmission system experiences no equipment overloads, voltage violations, or instability following a contingency outage of the single most crucial element, whether that piece of equipment is a generator, a transmission line, or a transformer. The single-contingency criterion is generally the minimum reliability standard at which electric utilities plan their bulk power systems.
- Under a multiple-contingency criterion, a utility's transmission system must withstand the simultaneous failure of two or more elements with a controlled loss of load and no cascading outages which affect neighboring utilities. The transmission system must subsequently be able to adjust so that all elements operate within their emergency ratings for the duration of the outage.

In response to congressional actions to require mandatory reliability standards, which were supported by the Commission, the FRCC has implemented a compliance program that will monitor and enforce compliance with NERC and FRCC reliability standards. The program relies on self-assessment, periodic reporting, and on-site audits to ensure compliance. In administering the compliance program, the FRCC works closely with all owners, operators, and users of the state's bulk electric system. The Commission staff attends FRCC meetings and maintains an open dialog with the

FRCC on reliability matters affecting the state. The Commission will continue to work closely with the FRCC, NERC, and FERC to ensure the adequacy and reliability of Florida's electric grid.

FRCC TRANSMISSION PLANNING PROCESS

One of the benefits attributed to the formation of a regional transmission organization (RTO) is centralized, coordinated transmission planning. In April 2006, the Commission closed a lengthy investigation into the prudence of forming an RTO, known as GridFlorida, because it did not appear to be cost-effective. The Commission directed Peninsular Florida's utilities to coordinate their transmission planning activities through the FRCC in an effort to capture some benefits of an RTO. The FRCC's transmission planning process is expected to yield a more complete transmission expansion plan from a peninsular perspective. The process will ensure that the reliability standards and criteria established by the NERC and the FRCC are met and will use the specific design, operating, and planning criteria employed by Peninsular Florida transmission owners. The Commission staff has participated in the FRCC's meetings on transmission planning. The Commission will continue to monitor coordinated planning efforts by Florida's utilities and, if necessary, will exercise its Grid Bill authority to ensure the adequacy and reliability of Florida's transmission system.

The FRCC performs a long range, ten-year study, as well as a study of the interface between Florida and the Southern Company (Southern). Sensitivity studies test the robustness of Peninsular Florida's transmission system under various conditions and are performed within both studies. Examples of the sensitivities studied are as follows:

- Transmission and/or generation facilities unavailable due to scheduled and/or forced outages.
- Weather extremes for summer and winter periods.
- Different load levels (e.g., 100-, 80-, 60-, and 40 percent) and/or seasons of the year.
- Various generation dispatches that will test or stress the transmission system.
- Reactive supply and demand assessment (generator reactive limits and power factor).
- Specific areas of combination/cluster of generation and load serving capability among various transmission owners/providers in the FRCC that continually experience or are expected to experience significant congestion.
- Other scenarios or system conditions, such as stability analysis.

Consistent with the FRCC transmission planning process, these sensitivity studies will not necessarily call for the construction of transmission facilities identified in the studies, but will provide insight into how robust the planned transmission system is expected to be.

2007-2016 LONG RANGE TRANSMISSION STUDY

The long range transmission study is a steady-state assessment of the adequacy of the FRCC’s bulk and 69 kV transmission system for 2007-2016. NERC Transmission Planning Standards are used to gauge the adequacy of the transmission system. These transmission planning standards state that the transmission system will remain stable within the applicable thermal and voltage rating limits without cascading outages, under normal system conditions, as well as single and multiple contingency events. The FRCC’s *Long Range Transmission Reliability Study* consists of two parts; the first part represents the first five years which are analyzed in detail with specific remediation recommendations for all thermal and voltage screening criteria violations in the area while the second part represents the second five years which are studied to determine if any trends that may require attention are developing. Many assumptions made for testing purposes are based on additions reported in the utilities’ 2006 Ten-Year Site Plans. With several capacity changes not reflected in the utilities’ 2006 Ten-Year Site Plans, the confidence level of the reliability study’s results decreases with respect to time.

The results of the *Long Range Transmission Reliability Study* for normal, single, and multiple contingency events within the FRCC region meet NERC Transmission Planning Standards for bulk power systems.

The *Long Range Transmission Reliability Study* for transmission facilities, 69kV and greater, within the FRCC Region concluded that potential thermal and voltage screening criteria violations can be resolved by operator intervention meeting NERC Transmission Planning Standards. The resolutions were thoroughly reviewed by the transmission owners and found to be adequate in order to maintain acceptable system performance under all conditions and events. The FRCC found no major projects requiring long lead times.

FLORIDA-SOUTHERN INTERFACE TRANSFER CAPABILITY STUDY

Currently, Peninsular Florida’s utilities use approximately two-thirds of the total Florida-Southern interface capability to import firm capacity into the FRCC region. Firm capacity exports to Southern do not occur at this time, nor are they forecasted to occur during the planning horizon. The FRCC and Southern annually perform an interregional transmission study to confirm the maximum import and export capability between the two regions and to ensure that the transmission plans of both regions jointly meet the NERC reliability standards. Based on studies performed by the FRCC and Southern, there do not appear to be any reliability constraints at the Florida-Southern interface at this time concerning the current use of interface capacity. The 2007 study confirmed the total transfer capabilities between the FRCC and Southern, which are contained in Table 11.

Table 11. Florida-Southern Interface Transfer Capability

Transfer	Transfer Capability (MW)	
	Summer	Winter
Southern to Florida (import)	3600	3700
Florida to Southern (export)	1500	2000

Update of 2006 Florida Central Coordinated Study

The Florida Central Coordinated Study, completed in 2006, identified several major 230 kV projects that need to be constructed and in service as soon as possible. Work on these projects has begun and many of these projects will be in service by June 2011, including the Lake Agnes-Gifford 230 kV transmission line, which has recently been approved. The 2007-2016 Long Range Transmission Study performed by the FRCC, showed significant improvements throughout Central Florida due to the implementation of the planned and committed projects in this area, and until 2011, operational actions will continue to be required.

PROPOSED TRANSMISSION LINES REQUIRING CERTIFICATION

Many of the transmission lines proposed by the FRCC as needing to be built require TLSA certification. To require certification under Florida's TLSA, a proposed transmission line must meet the following criteria: a rating of at least 230 kV, crossing a county line, and a length of at least fifteen miles. Proposed lines in an existing corridor are exempt from TLSA requirements. The Commission determines the reliability need for and the proposed starting and ending points for lines requiring TLSA certification. The Commission must issue a final order granting or denying a determination of need within 90 days of the filing of a petition. The proposed corridor route is determined by the DEP during the certification process. The Governor and Cabinet sitting as the Siting Board ultimately must approve or deny the overall certification of the proposed line.

The Commission has granted a Determination of Need for five transmission lines in recent years. Two of these facilities have also received certification under the TLSA by Florida's Governor and Cabinet. Table 12 lists all proposed transmission lines in the Ten-Year Site Plans that meet the criteria for TLSA certification.

Table 12. Proposed Transmission Lines Requiring Certification

LINE OWNER	TRANSMISSION LINE	LINE LENGTH (MILES)	NOMINAL VOLTAGE (kV)	DATES		IN-SERVICE
				NEED APPROVED	TLSA CERTIFIED	
PEF	Hines Energy Complex-West Lake Wales #1	21.0	230	11 / 2004 ²⁶	6 / 2005 ²⁶	12 / 2007
FPL	St. Johns-Pringle	26.0	230	5 / 2005	4 / 2006	12 / 2008
PEF/TEC	Lake Agnes-Gifford	32.3	230	9 / 2007		6 / 2011
FPL	Manatee-Bob White	30.0	230	8 / 2006		12 / 2011
FPL	Grove Area-Sweatt	25.0	230			6 / 2012
TEC	Willow Oak-Davis	29.4	230	6 / 2007		6 / 2012

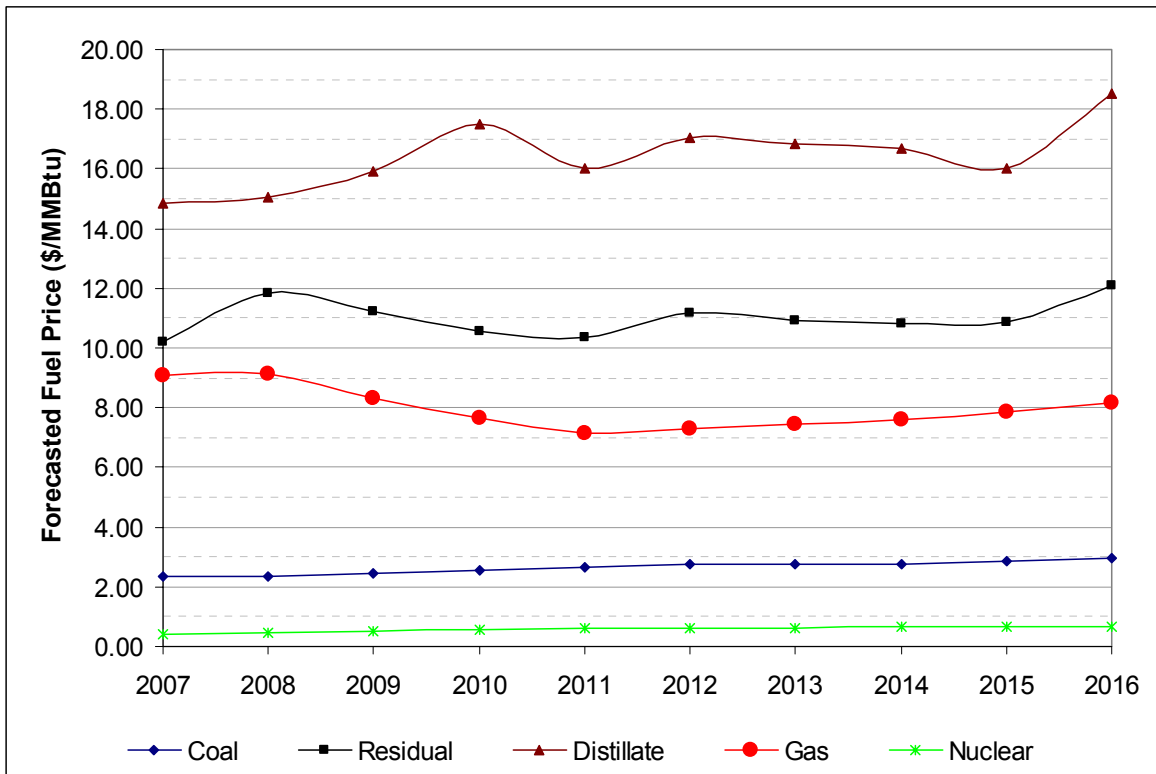
²⁶ Approved with Need Approval of Hines CC Unit 4, Certified with PPSA Certification of Hines CC Unit 4

6. FUEL SUPPLY, PRICE, AND TRANSPORTATION

Utilities must decide which type of plant to build several years in advance: approximately four years for combined cycle, seven years for coal, and ten or more years for nuclear. As a result, the risk associated with selecting a generation technology is highly dependent on the accuracy of the long-term fuel price forecast. A utility's fuel price forecast is the foundation for determining the type of new capacity additions needed to reliably serve load.

Figure 15 illustrates the weighted average forecasted fuel price for the eleven reporting utilities. The forecasted price for each fuel type is weighted by energy generation, meaning that utilities that generate large amounts of electricity for a particular fuel type will have more of an influence on the average. Prices for solid fuels such as nuclear and coal are forecasted to remain stable compared to oil and natural gas prices. Such a relationship highlights the importance of maintaining a balanced fuel supply.

Figure 15. Reporting Utilities: 2007 Weighted Average Fuel Price Forecast

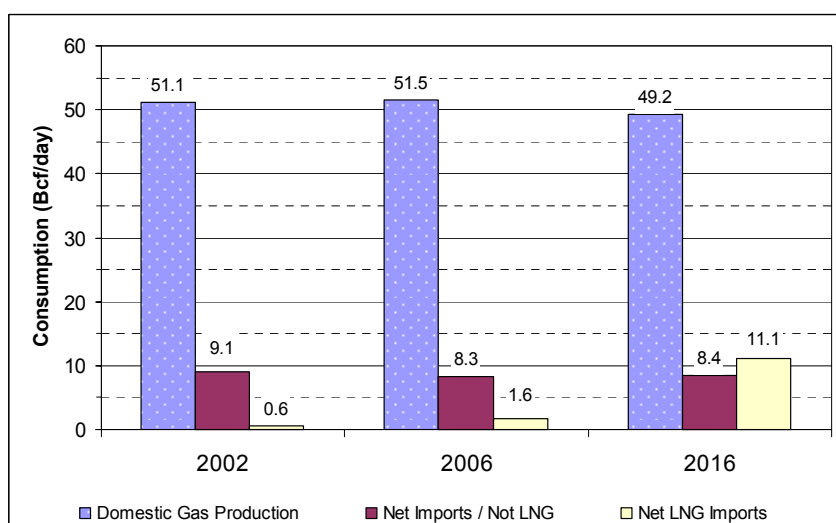


NATURAL GAS PRICE FORECASTS

Supply and Price

Figure 16 illustrates forecasts of declining domestically supplied natural gas coupled with increases in imports of Liquefied Natural Gas (LNG). Gas supplies from Canada and Mexico are projected to remain relatively stable. The reporting utilities are generally forecasting new gas supply from Canada's Mackenzie Delta region in 2009 and from LNG imports in 2010 to 2011. Domestic supply will decline even though new domestic sources, advances in drilling technology, and unconventional production in East Texas and the Rocky Mountains will slow the rate of decline. Longer term, domestic supply could be enhanced by development of resources in the Alaska North Slope area.

Figure 16. Natural Gas Consumption in the U.S. by Place of Origin²⁷



Demand for natural gas over the planning period will be driven by the requirements of gas-fired electric generators. Demand growth in other industry sectors and the residential sector is expected to be modest.

The utilities provided forecasts of natural gas prices in nominal dollars on a delivered basis. The utilities generally forecast gas prices ranging from \$7 to \$10 per MMBtu through 2009. Starting around 2010, the utilities forecast gas prices to decline to \$6 to \$9 per MMBtu as imports from Canada and imported LNG become available. High crude oil prices provide some support for gas prices due in part to fuel switching.

The utilities expect continued volatility in natural gas prices. Hurricanes and tropical storms in the Gulf of Mexico typically cause short-term spikes in the price of natural gas.

The price forecasts are based significantly on the expectation of sizable increases in imports of LNG. A delay for this expectation or decreases the expected amount of LNG will place upward pressure on natural gas prices. Furthermore, the expectation of increases in LNG supply is based on

²⁷ Sources: FPL, The Petroleum Industry Research Associates Energy Group (PIRA) and internal analysis by FPL.

new re-gasification and terminal facilities coming on line during the period 2008 through 2010. These projects are on schedule, and tanker capacity for importing LNG appears to be adequate. The primary source areas for LNG imports will be Qatar and Trinidad. Liquefaction capacity in these areas is currently somewhat tight.

Transportation

In Florida, increased dependency on natural gas could affect the reliability of electric utility generation supply, primarily from the possibility of natural gas supply or transportation disruption. The NERC established a Gas/Electricity Interdependency Task Force to determine reliability impacts and to recommend mitigating measures should reliability risks arise. The NERC task force completed a study in May 2004, concluding in part that gas pipeline reliability can substantially impact electric generation, and that electric system reliability can have an impact on gas pipeline operations. The FRCC continues to review the recommendations made by the NERC task force to determine where to focus future analyses. The FRCC has recommended that Peninsular Florida has adequate pipeline capacity for reliability purposes for both current and future natural gas demand. However, with this statement the FRCC assumes that generating units having the capability to burn oil will do so at time of peak demand. Therefore, economics may be the driving factor for any future gas pipeline expansions.

Florida currently relies primarily on two gas pipeline companies, Florida Gas Transmission (FGT) and Gulfstream Natural Gas (Gulfstream), to supply natural gas to electric utilities, large industrial customers, and local distribution companies. FGT operates approximately 5,000 miles of pipeline nationwide, including 3,300 miles in Florida. FGT's system has undergone six expansions since its inception in 1959, increasing pipeline capacity from its original 0.278 Bcf/day to its current 2.2 Bcf/day. Gulfstream has a system pipeline capacity of 1.1 Bcf/day. The first phase of Gulfstream's system, which entered service in 2002, crosses the Gulf of Mexico between Pascagoula, Mississippi, and Manatee County, Florida, with more than 430 miles of 36" diameter pipe. The Phase II expansion, a 110-mile extension to FPL's Martin plant site in Martin County entered service in February 2005.

In-State Pipeline Transportation Projects

FGT: FGT's Phase VII Expansion Project involves construction of 33 miles of 36" diameter pipeline looping and installation of 9,800 horsepower of compression. The expansion provides approximately 0.16 Bcf/day of additional capacity to transport natural gas from a connection with Southern Natural Gas Company's Cypress Pipeline. The expansion began service in May 2007.

Gulfstream: Gulfstream's Phase III expansion will provide service to FPL's West County Energy Center and is expected to begin service in the summer of 2008. The Phase IV expansion will provide pipeline capacity for PEF's Bartow site in Pinellas County.

Cypress Pipeline: Phase I of this project is a 24" pipeline that connects the Elba Island LNG facility near Savannah, Georgia, to FGT's system near Jacksonville. This pipeline began service in May 2007 and provides gas to PEF's Hines units. This pipeline plans additional phases involving looping and additional compression.

Out-of-State Pipeline Projects

Southeast Supply Header: Duke Energy and CenterPoint Energy will construct a 270 mile, 36" diameter pipeline from the Perryville hub in Louisiana to interconnect with the Gulfstream Pipeline at Pascagoula, Mississippi. It will intersect with major pipelines and storage facilities. FPL has contracted for 50 percent of the capacity and PEF has contracted for 20 percent. For both utilities, the Commission has approved the recovery of prudent transportation costs associated with this pipeline through the fuel cost recovery clause. This pipeline is expected to begin service in July 2008.

Columbia Gulf Transmission: Columbia Gulf plans to construct a pipeline from the Perryville hub to Pascagoula, Mississippi. It is expected to begin service at the end of 2007 and will interconnect with FGT and Gulfstream.

Gulf South Pipeline Company: Gulf South has proposed three expansion projects. Like the above-mentioned projects, these expansions intend to bring unconventional gas, from areas such as the Barnett Shale and Bossier Sands in east Texas, to connections with FGT and Gulfstream.

Liquefied Natural Gas Pipeline Projects

In addition to the Cypress Pipeline, two LNG projects are proposed to serve Florida. The Calypso project is sponsored by Suez Energy North America. This project will involve a submerged buoy system off the Southeast Florida coast that will serve as an offshore delivery point for LNG. This port would be located approximately 10 miles offshore from Port Everglades in Broward County. The expected capacity is approximately 1.9 Bcf/day. The project is in the permitting stage.

Höegh LNG – Port Dolphin: This proposed offshore terminal and submerged buoy system would be 28 miles offshore and would be connected to Port Manatee near Tampa Bay by a 42 mile pipeline. The proposed capacity is 1.2 Bcf/day. In April 2007, the project applied with the U.S. Coast Guard to build and operate this LNG import/regasification terminal.

COAL PRICE FORECASTS

Supply and Price

The reporting utilities forecasted coal prices in nominal dollars on a delivered basis. Therefore, there are differences in the forecasted prices depending on the location of the particular utility's coal plant and the mode of transportation. The forecasts use existing long-term contract prices and estimates of the spot market prices.

The reporting utilities generally see stable coal prices over the planning horizon. Some upward trend in prices is expected as demand increases due to new coal generation units coming on line across the U.S. Exports and increased mining cost also provide upward price pressure. However, an ample supply of domestic coal exists and the use of imported coal is expected to increase. Several Florida utilities import coal from Colombia and Venezuela. Current coal prices are high compared to prices in the past five years. This should provide mine operators an incentive to increase production. Increased supply from the Powder River Basin and Illinois Basin, as well as imports, should moderate coal prices over the planning horizon.

In its Annual Energy Outlook for 2007, EIA expects a slight decrease in average Minemouth prices during the period 2010 to 2015. This decrease is driven by production shifting away from high-cost Central Appalachian coal. EIA notes surface mined coal from the West should capture a growing share of the market. EIA also indicates that coal prices are sensitive to changes in energy and environmental policies. Steps to reduce greenhouse gas emissions will affect future coal supply and demand.

Several reporting utilities burn a mix of coal and petroleum coke (petcoke), which is a byproduct of petroleum refining. An increase in coal units would increase the demand for petcoke. However, refinery capacity will increase in the Gulf Coast area and the Caribbean Basin, which will increase supply. The forecasts suggest that petcoke prices will be stable.

Transportation

Also contributing to today's relatively high delivered prices is rail transportation congestion. Moreover, as railroads expand tracks to relieve the problem, transportation costs will increase since the railroads will include returns on expansions in rates. Some reporting utilities depend entirely on rail for coal transport. Others use waterborne and rail transportation, both of which can reduce costs. Over the planning horizon, EIA sees periodic bottlenecks for railroads transporting western coal to the eastern United States.

Potentially, a combination of ocean transport with short-haul rail transport can reduce delivered MMBtu costs. For utilities with plants at interior sites, the ability to get short-haul rail transport contracts is an important factor for reducing the costs of delivered coal over the planning period.

RESIDUAL OIL PRICES AND DISTILLATE OIL PRICES

Supply and Price

For the planning period, OPEC countries are expected to gain market share over non-OPEC countries. By 2012, seven countries will account for 50 percent of world crude oil production. Based on announced exploration and production projects, the supply of oil will increase through 2012.

Crude oil prices should increase with the projected 3 percent annual global economic growth. Oil prices depend on global economic growth, other competing energy developments, and geopolitics. Economic growth in India, China, and the Pacific Rim countries has increased demand. Platts, an energy information service, states there will always be a geopolitical risk premium in oil prices. Current sources of geopolitical risk for oil prices are Venezuela, Nigeria, Russia, former Soviet States, and the Middle East. New supplies through 2012 may moderate price increases, but as OPEC gains market share, oil prices are expected to increase at a higher rate. Spare production capacity for OPEC countries – specifically, Saudi Arabia and the United Arab Emirates – has decreased, which reduces the ability of these countries to increase supply and reduce prices.

Several Florida electric utilities make significant use of residual fuel oil (heavy oil) for generation. The companies provided price forecasts showing nominal delivered prices for residual fuel oil, typically in three categories based on sulfur content. As noted for petroleum coke, refinery capacity will increase in the Gulf Coast area and the Caribbean Basin. This expansion will increase

the supply of residual fuel oil. For the planning period, the utilities are forecasting stable residual oil prices.

Florida electric utilities also use distillate oil – No. 2 fuel oil – as a back-up fuel for natural gas plants that are fuel switchable and as a starter fuel for coal plants. Due to its relatively high price, utilities do not use distillate oil to generate a significant amount of electricity. As with residual oil prices, the utilities are forecasting stable distillate oil prices.

NUCLEAR FUEL PRICES

Supply & Price

The long-term outlook for the nuclear fuel supply chain is currently influenced by the following factors:

- Aging milling, conversion, and enrichment facilities.
- Lack of excess capacity.
- Lack of supply diversification at processing facilities.
- Potential regulatory changes and increased security requirements.
- Number and timing of the start-up of new nuclear plants.
- Number and timing of the start-up of new mines and milling facilities.
- Performance of processing plants.

Traditionally, nuclear fuel prices have been very stable; however, based on the above factors, prices are becoming more volatile. Both owners of Florida nuclear units – PEF and FPL – are forecasting a moderate upward trend in nuclear fuel prices for the 2007 to 2016 planning period. An additional feature of industry pricing is that customers depend increasingly on long-term contracts, with terms out to five years, for uranium conversion, enrichment, and fabrication.

7. STATE, REGIONAL, AND LOCAL AGENCY COMMENTS

Florida Municipal Power Agency

Department of Environmental Protection. FMPA's Ten-Year Site Plan is adequate for planning purposes.

Florida Fish and Wildlife Conservation Commission. FMPA's Ten-Year Site Plan is suitable for planning purposes.

North Central Florida Regional Planning Council. No comment on FMPA's Ten-Year Site Plan.

South Florida Regional Planning Council. FMPA should diversify fuel sources and emphasize renewable clean fuels. Planning measures should be consistent with Strategic Regional Policy Plan goals and objectives including energy conservation and the development of renewable, clean fuels.

Treasure Coast Regional Planning Council. FMPA has a potential site at T.G. Smith Power Plant in Lake Worth suitable for possible upgrades. The capacity upgrades described are consistent with the strategic Regional Policy Plan.

South Florida Water Management District. No adverse comments regarding the proposed sites discussed in FMPA's Ten-Year Site Plan.

Florida Power & Light Company

Department of Environmental Protection. FPL's Ten-Year Site Plan is adequate for planning purposes.

Florida Fish and Wildlife Conservation Commission. FPL's planning for Turkey Point and Glades Power Park is suitable for planning purposes. Concerns relating to the West County Energy Center include water resource needs and impact and or interaction with the Everglades Restoration Plan. Also any development or installation through the Corbett Wildlife Management Area would be a concern.

Central Florida Regional Planning Council. FPL's planning documents have been reviewed and no potential conflicts with natural resources, growth management policies, or the Strategic Regional Policy Plan have been identified.

South Florida Regional Planning Council. FPL should diversify fuel sources and emphasize renewable clean fuels. Planning measures should be consistent with Strategic Regional Policy Plan goals and objectives including energy conservation and development of renewable, clean fuels.

Treasure Coast Regional Planning Council. FPL has no new preferred site plans within Treasure Coast's jurisdiction. Potential sites at the Martin Power Plant and the Riviera Plant Site do not conflict with regional policy.

South Florida Water Management District. Has no adverse comments regarding the proposed sites discussed in FPL's Ten-Year Site Plan.

Brevard County Board of County Commissioners. The FPL plan for generator additions for the Cape Canaveral Plant should be consistent with local zoning regulation and growth management policies. Possible impacts of water discharges into the adjacent Indian River Lagoon are a concern.

Gulf Power Company

Department of Environmental Protection. GULF's Ten-Year Site Plan is adequate for planning purposes.

Florida Fish and Wildlife Conservation Commission. GULF's Ten-Year Site Plan is suitable for planning purposes.

Apalachee Regional Planning Council. GULF's potential plans for capacity addition to the Sholz Plant Site in Jackson County should be consistent with local zoning regulation, growth management policies, and environmental regulation.

West Florida Regional Planning Council. GULF's Ten-Year Site Plan is consistent with the West Florida Strategic Regional Policy Plan.

The County of Escambia. GULF's proposed project, located in Escambia County, should be consistent with the Escambia County Land Development Code.

JEA

Department of Environmental Protection. JEA's Ten-Year Site Plan is adequate for planning purposes.

North Central Florida Regional Planning Council. No comment on JEA's Ten-Year Site Plan.

North Florida Regional Council. JEA's Ten-Year Site Plan contained ample forecasting. Council supports efforts to reduce reliance on coal and oil as well as efforts to increase energy conservation activities and develop clean alternative energy alternatives.

Orlando Utilities Commission

Department of Environmental Protection. OUC's Ten-Year Site Plan is adequate for planning purposes.

South Florida Water Management District. No adverse comments regarding the proposed sites discussed in OUC's Ten-Year Site Plan.

Orange County. OUC's Ten-Year Site Plan does not appear to indicate any inconsistencies with Orange County's Growth Management policies at this time.

Progress Energy Florida

Department of Environmental Protection. PEF's Ten-Year Site Plan is adequate for planning purposes.

Florida Fish and Wildlife Conservation Commission. PEF's Ten-Year Site Plan is suitable for planning purposes.

Central Florida Regional Planning Council. PEF's planning documents have been reviewed and no potential conflicts with natural resources, growth management policies, or the Strategic Regional Policy Plan have been identified.

Tampa Bay Regional Planning Council. PEF's Ten-Year Site Plan is consistent with the Council's Strategic Regional Policy Plan. Proposed changes to the Polk site will have a net positive impact on air quality and water quality in, and surrounding, the Tampa Bay region.

Seminole Electric Cooperative

Department of Environmental Protection. SEC's Ten-Year Site Plan is adequate for planning purposes.

Central Florida Regional Planning Council. SEC's planning documents have been reviewed and no potential conflicts with natural resources, growth management policies, or the Strategic Regional Policy Plan have been identified.

North Florida Regional Council. SEC's Ten-Year Site Plan contained ample forecasting. Council supports efforts to reduce reliance on coal and oil as well as efforts to increase energy conservation activities and develop clean alternative energy alternatives.

Putnam County Planning and Development Services. No comment on SEC's Ten-Year Site Plan.

City of Tallahassee

Department of Environmental Protection. TAL's Ten-Year Site Plan is adequate for planning purposes.

Florida Fish and Wildlife Conservation Commission. TAL's Ten-Year Site Plan is suitable for planning purposes.

Apalachee Regional Planning Council. With the recent uncertainty of the Taylor Energy Center, concerns regarding transmission capabilities are raised.

North Central Florida Regional Planning Council. No comment on TAL's Ten-Year Site Plan.

Leon County Planning Department. TAL's Ten-Year Site Plan does not raise any consistency issues.

Tampa Electric Company

Department of Environmental Protection. TECO's Ten-Year Site Plan is adequate for planning purposes.

Central Florida Regional Planning Council. TECO's planning documents have been reviewed and no potential conflicts with natural resources, growth management policies, or the Strategic Regional Policy Plan have been identified.

Tampa Bay Regional Planning Council. TECO's Ten-Year Site Plan is consistent with the Council's Strategic Regional Policy Plan.