Report No. EJ-2002-07
October 2002

Characterization of Florida Reliability Coordinating Council Region

DOE GEM-SET

Government
Energy
Market
Segment
Evaluation
Tool

PARSONS

NETL

Prepared for the United States Department of Energy
National Energy Technology Laboratory

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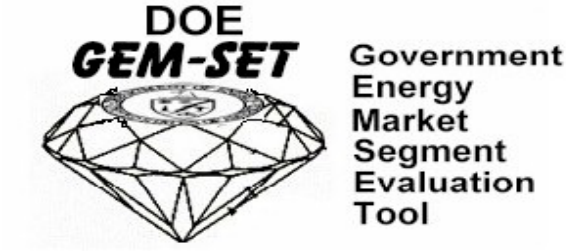

Final Report

GEMSET Regional Segmentation Analysis:

2002 Characterization of the Florida Reliability Coordinating Council Region

October 2002

Prepared for:
The United States Department of Energy
National Energy Technology Laboratory

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Dated Material
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Technical Report Abstract

EJ-2002-07

2002 Characterizing the Florida Reliability Coordinating Council Region

Electric Power Market Condition Evaluation in a Regulated Electric Market Region

The Florida Reliability Coordinating Council (FRCC) region includes generators that serve the electric market in the state of Florida, and includes over 50 public and private utilities in the state. Florida is one of the states with the fastest population growth, and is now the fourth largest in the United States in terms of population. Parsons evaluated the regulated market conditions that exist in the FRCC region. Some features of this study include the following:

- Demands were characterized hour-by-hour for each of the utilities, and summarized for the entire FRCC.
- A database was developed that characterizes FRCC utility cost of generation and load demand that allows ease of evaluation of the potential return to units having different production costs.
- Fuel prices within the region were assessed and projected for future evaluations.
- The units operating in the region were identified.
- The future expectation of FRCC for demand growth, and the list of planned units that might meet that demand growth were identified.

Key Services

- Characterize current FRCC electric sale prices, and potential return to generating unit owners from operation within FRCC
- Estimate FRCC demand growth, the existing units in the State of Florida, and the generating units planned over the next ten years for construction to meet demand growth
- Evaluate the fuel price history and prospects for the FRCC region
- Provide the historical base of information needed to evaluate the economic merits of new generation projects for consideration in FRCC

Study Region

State of Florida

Client

U.S. Department of Energy
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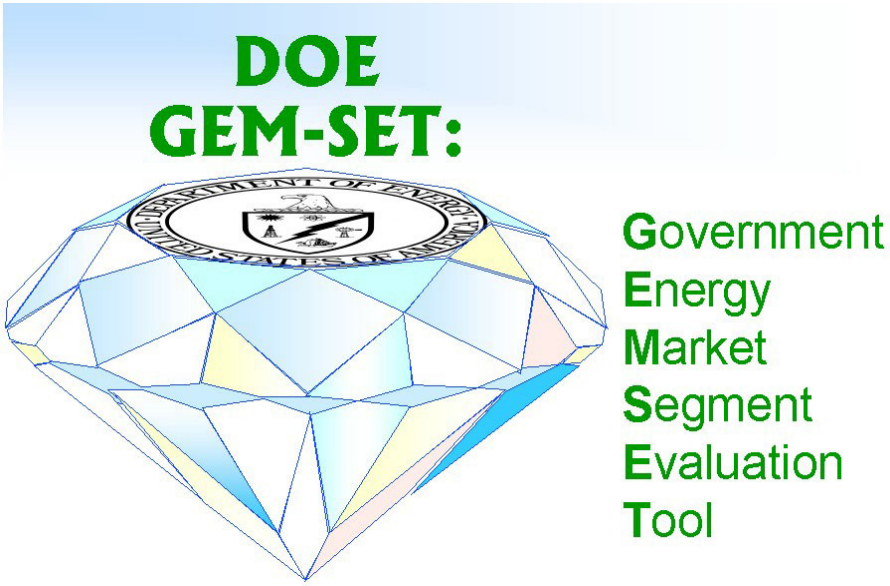
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The reader should check with the DOE project manager, Patricia Rawls, to see if there is a more recent issue of this report, or to discuss any related information that might be available about the region, or about the GEMSET project data.

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Patricia A. Rawls, *Project Manager*

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Abbreviations and Acronyms

Term	Meaning
AAGC	average automatic generation control
ACAP	available capacity (as in PJM West)
AEO1999	EIA Annual Energy Outlook 1999
AEO2000	EIA Annual Energy Outlook 2000
AEO2001	EIA Annual Energy Outlook 2001
AEO2002	EIA Annual Energy Outlook 2002
AEP	American Electric Power
AGC	automatic generation control
ALM	Active Load Management
ASCC	Alaska Systems Coordinating Council
AVR	automatic voltage regulator
Bcf	billion cubic feet, that is, 10^9 cubic feet
Block Forwards Market	a continuously traded standardized product for month-ahead on-peak energy in blocks of 1 or 25 MW
BME	balancing market evaluation
CAISO	California Independent System Operator
CalPX	California Power Exchange (no longer operating)
Capacity Resource	Generator qualifying as PJM capacity
CARL DATA	control area resource and load data submitted by Control Area Resources to the ISO
CDR	Capacity Deficiency Rate
COE	the cost of electricity, the levelized busbar cost of electric production including amortized capital, operating, and maintenance costs
combustion turbine, CT	a synonym for gas turbine, used interchangeably
ComEd	Commonwealth Edison
CP&L	a Progress Energy company
CR	competitive retailer
CSC	commercially significant constraint
DAM	day-ahead market
Day-Ahead Market	functions as a physical forwards market and establishes the supply and demand for electric power in California one day in advance of delivery
Day-Of Market	provides for three auction periods daily, 6 a.m., noon, and 4 p.m.
DCA	Department of Community Affairs
DEP	Department of Environmental Protection

DMNC ..... dependable maximum net capability
DNI ..... desired net interchange
DOE ..... United States Department of Energy
DSM ..... demand side management
ECAR ..... East Central Area Reliability Coordination Agreement, a NERC region
EDC ..... Electric Distribution Company
EFORd ..... demand equivalent forced outage rate
eGADS ..... electronic generating availability data system; an electronic data system allowing the posting of data regarding a generating unit's availability record
EIA ..... the Energy Information Administration of the DOE
EPA ..... U.S. Environmental Protection Agency
EPAct ..... Energy Policy Act of 1992
EPRI ..... Electric Power Research Institute
ERCOT ..... Electric Reliability Council of Texas, a NERC region
ERO ..... industry self-regulatory electric reliability organization
EUE ..... expected unserved energy
FERC ..... Federal Energy Regulatory Commission
FGD ..... flue gas desulfurization, a sulfur emission control device
FGT ..... Florida Gas Transmission, a natural gas transportation pipeline company
FLOASIS ..... Peninsular Florida's OASIS
FPC ..... Florida Power, a Progress Energy company
FPL ..... Florida Power & Light Company
FPSC ..... Florida Public Service Commission
FRCC ..... Florida Reliability Coordinating Council, a NERC region
FTR ..... Financial Transmission Right
GADS ..... generating availability data system; see "eGADS"
gas turbine, GT ..... a synonym for combustion turbine, used interchangeably
GEMSET ..... government energy market segment evaluation tool
GNP ..... gross national product
GT ..... gas turbine (a synonym for combustion turbine)
GTCC ..... natural gas fueled gas turbine combined cycle
HAM ..... hour-ahead market
HHV ..... higher heating value of a fuel including the heat released if all of the water vapor in the combustion products were condensed
HRSG ..... heat recovery steam generator
ICAP ..... installed capacity requirement
IOU ..... investor-owned utility
IPD ..... implicit price deflator
IPM ..... the EPA's integrated planning model

IPP ..... an independent power producer, an unregulated electric generating company

IRM ..... installed reserve margin

IRP ..... integrated resource plan

ISO ..... independent system operator; a regulated body that dispatches all competitive electric generation on the high voltage transmission grid within its service region; they operate the grid, administer the power pools power transfers, select the lower cost generation bid into the pool according to the pool's operating rules, and maintain the integrity of the electric transmission grid

ISONE ..... New England ISO

ITC ..... Independent Transmission Company

JEA ..... Jacksonville Electric Authority

KUA ..... Kissimmee Utility Authority

LAK ..... City of Lakeland

LBMP ..... locational-based marginal pricing

LCC ..... local control center

LHV ..... lower heating value of a fuel, the heat released if all of the water vapor in the combustion products remained as steam

LMP ..... locational marginal price

LOC ..... lost opportunity cost

LOLE ..... loss of load expectation

LOLP ..... loss of load probability

LSE ..... load-serving entity

MAAC ..... Mid-Atlantic Area Council, a reliability council, a NERC region

MAIN ..... Mid-America Interconnected Network, a NERC region

MAPP ..... Mid-Continent Area Power Pool, a NERC region

MCP ..... market clearing price

MCPC ..... market clearing price for capacity

MCPE ..... market clearing price for energy

MCR ..... maximum continuous rating

MISO ..... Midwest Independent System Operator

MMC ..... market monitoring committee

MMU ..... Market Monitoring Unit

MOU ..... Memorandum of Understanding

MVA ..... megavolt amperes

MVAR ..... megavolt-ampere-reactive

MWe ..... electrical megawatts

MWth ..... thermal megawatts

NAERO ..... the North American Electric Reliability Organization; NERC is in the process of transforming itself into NAERO, whose principal mission will

	be to develop, implement, and enforce standards for a reliable North American bulk electric system. (NERC has no enforcement capability.)
NEL	net energy for load
NEMS	the EIA's national energy modeling system
NERC	North American Electric Reliability Council; soon, NERC, without enforcement authority, will become NAERO with that authority
NERTO	North East Regional Transmission Owner
NETL	the U.S. Department of Energy's National Energy Technology Laboratory
NOIE	Non-Opt-In Entity
NOPR	notice of proposed rulemaking
NOx	nitrogen oxides, types of air pollutant, mainly NO and NO_2
NPCC	Northeast Power Coordinating Council, a NERC region
NUG	non-utility generator, a competitive, unregulated independent electric power producer
NYCA	New York Control Area
NYISO	the New York State independent system operator, a NERC region
NYMEX	New York Mercantile Exchange
NYPA	New York Power Authority
NYPP	New York Power Pool
NYSRC	New York State Reliability Council
O&M	operation and maintenance
OASIS	open-access same-time information system
OATT	open access transmission tariff
OI	PJM Office of the Interconnection, LLC
OTAG	Ozone Transport Assessment Group
OTR	Northeast Ozone Transport Region
OUC	Orlando Utilities Commission
P.E.	licensed professional engineer
PCD	particulate emission control device
PECO	Philadelphia Electric Company
PJM	Pennsylvania, New Jersey, Maryland, or PJM Interconnection LLC, an ISO/RTO
PPL	Pennsylvania Power & Light Company
PRL	price responsive load
PSC	local state Public Service Commission
PSE&G	Public Service Electric & Gas Company
PUCT	Public Utility Commission of Texas
PUHCA	Public Utilities Holding Company Act
PURA	Public Utility Regulatory Act
PURPA	Public Utility Regulatory Policy Act of 1978

RACT ..... reasonably available control technology (pollution control)
RAG ..... Reliability Assessment Group
REP ..... retail electric provider
RMCP ..... regulation market clearing price
RTEM ..... real-time energy marketplace
RTO ..... regional transmission operator
RWG ..... Resource Working Group
SAS ..... Statement on Auditing Standards
SCD ..... security-constrained dispatch
SCNG ..... Strategic Center for Natural Gas
SCUC ..... security-constrained utility commitment
SERC ..... Southeast Electric Reliability Council, a NERC region
SMCP ..... spinning market clearing price
SMD ..... FERC's Standard Market Design for competitive electric markets
SOx ..... sulfur oxides, types of air pollutant, mainly SO_2
SPP ..... Southwest Power Pool, a NERC region
SRE ..... supplemental resources evaluation
State Estimator ..... PJM system model
SWG ..... Stability Working Group
TAC ..... Technical Advisory Council
TCC ..... Transmission Congestion Contracts
TCR ..... Transmission Congestion Right
TDSP ..... Transmission and/or Distribution Service Provider
TECO ..... Tampa Electric Company
TIS ..... Texas Interconnected System
TWG ..... Transmission Working Group
TYSP ..... 10-year site plan
UDI ..... Utility Data Institute
VAR ..... volt-ampere-reactive
WECC ..... Western Electricity Coordinating Council (formerly WSCC), a NERC region

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1. Summary of Florida Reliability Coordinating Council (FRCC)

1.1 Introduction

This section discusses the Florida State segmentation used in the DOE GEMSET market analysis model. Over 50 investor-owned, municipal, and rural electric co-op utility systems serve this region. This National Electric Reliability Council (NERC) region, the Florida Reliability Coordinating Council (FRCC), is administered as a regulated market. In a regulated market like Florida, new generation is added upon approval by a utility commission or regulatory body. New generation here is primarily determined by the need to meet "standards of reasonableness." The way power companies run their business in a regulated market like FRCC is significantly different from that in a competitive utility region, where instead new generation options are approved by the ISO based on a first-come, first-served basis. Obtaining an adequate financial return from investments in new generation holds less risk in a regulated market than in the competitive markets that exist in other regions of the U.S.

The Florida Public Service Commission (FPSC) regulates the FRCC region. The FPSC filed information on August 2001 with statistics indicating that in-state capacity and known purchases from neighboring electric systems would be sufficient to meet the capacity reserve through the end of the year 2010.

The FRCC is the tenth FERC region. The region was established in 1996 to ensure reliable electric power to the nation's fourth largest state population. This report discusses the responsibilities of the FRCC, which is Florida's independent system operator (ISO), charged with ensuring a safe and reliable supply of electricity. As ISO, the FRCC is responsible for the state's electric integrity, unit dispatch and reliability, and administering the pricing mechanisms for delivery of power.

In the FRCC region, most of the electric sales are from generation owned and operated by the utility serving that territory. As required, the FRCC steps in to ensure that the appropriate standards are met with mandated sales from other utilities when a shortage is experienced. The utility systems that existed in the FRCC region in year 2000 are summarized in Exhibit 1-1, segregated on the basis of the type of ownership and generating capability.

This is a report about how electric power is sold in the FRCC region. It describes the regulated electric market in the FRCC's territory, and describes how the Florida regulated electric system operates now. The report also includes the FRCC's conjecture about how load might grow and be met by planned construction in the future.

Exhibit 1-1
Florida Electric Utility Industry

INVESTOR-OWNED SYSTEMS

Florida Power Corporation (FPC)
Florida Power & Light Company (FPL)
Florida Public Utilities (FPU)
Gulf Power Company (GPC)
Tampa Electric Company (TEC)

GENERATING MUNICIPAL SYSTEMS

Fort Pierce Utilities Authority (FTP)
Gainesville Regional Utilities (GRU)
Homestead, City of (HST)
Jacksonville Electric Authority (JEA)
Key West Utility Board, City of (KEY)
Kissimmee Utility Authority (KUA)
Lake Worth Utilities Authority (LWU)
Lakeland, City of (LAK)
New Smyrna Beach,
Utilities Commission of (NSB)
Ocala Electric Utility (OEU)
Orlando Utilities Commission (OUC)
Reedy Creek Utilities (RCU)
St. Cloud, City of (STC)*
Tallahassee, City of (TAL)
Vero Beach, City of (VER)
Florida Municipal Power Agency (FMP)

GENERATING RURAL ELECTRIC COOPERATIVES

Florida Keys Electric Cooperative, Inc. (FKE)
Seminole Electric Cooperative, Inc. (SEC)
Alabama Electric Cooperative, Inc. (AEC)

GENERATING - OTHER

Southeastern Power Administration (SPA)
(Jim Woodruff Dam)

NONGENERATING MUNICIPAL SYSTEMS

Alachua, City of (ALA)
Bartow, City of (BAR)
Blountstown, City of (BLT)
Bushnell, City of (BUS)
Chattahoochee, City of (CHA)
Clewiston, City of (CLE)
Fort Meade, City of (FMD)
Green Cove Springs, City of (GCS)
Havana, City of (HAV)
Jacksonville Beach, City of (JBH)
Leesburg, City of (LEE)
Moore Haven, City of (MHN)
Mount Dora, City of (MTD)
Newberry, City of (NEW)
Quincy, City of (QUI)
Starke, City of (STK)
Wauchula, City of (WAU)
Williston, City of (WIL)

NONGENERATING RURAL ELECTRIC COOPERATIVES

Central Florida Electric Cooperative, Inc. (CFC)
Choctawhatchee Electric Cooperative, Inc. (CHW)
Clay Electric Cooperative, Inc. (CEC)
Escambia River Electric Cooperative, Inc. (ESC)
Glades Electric Cooperative, Inc. (GEC)
Gulf Coast Electric Cooperative, Inc. (GCC)
Lee County Electric Cooperative, Inc. (LEC)
Okefenoke Rural Electric Membership Corp. (OKC)
Peace River Electric Cooperative, Inc. (PRC)
Sumter Electric Cooperative, Inc. (SMC)
Suwannee Valley Electric Cooperative, Inc. (SVC)
Talquin Electric Cooperative, Inc. (TAC)
Tri-County Electric Cooperative, Inc. (TRC)
West Florida Electric Cooperative, Inc. (WFC)
Withlacoochee River Electric Coop., Inc. (WRC)

*St. Cloud served by Orlando Utilities Commission

SOURCE: FRCC Aggregate Form 4.1

These data are dynamic, and what is reported here represents only a "snapshot" of information available a month prior to this report's issue date, October 2002. Periodically, the FRCC region will be revisited, and this report revised as time moves on.

This report includes the following discussions in subsequent sections:

- Section 2 describes the FRCC region.
- Section 3 describes historical information on generation, demands, the energy prices experienced by consumers, and the rate base aspects related to the investor-owned utilities (IOUs) in the region.
- Section 4 discusses the specifics of the FRCC operations in terms of planning, reliability considerations, and external factors affecting the FRCC.
- Section 5 presents the identified generation in the FRCC by the GEMSET Team, and the planned generation for the future.
- Section 6 gives FRCC's forecasts and projections on demand growth, and on the fuel prices forecasted for the region by the GEMSET Team. Other reports in this GEMSET series then analyze these FRCC forecasts, and assess them in the context of several future scenarios of factors influencing demand, generation mix, and price.

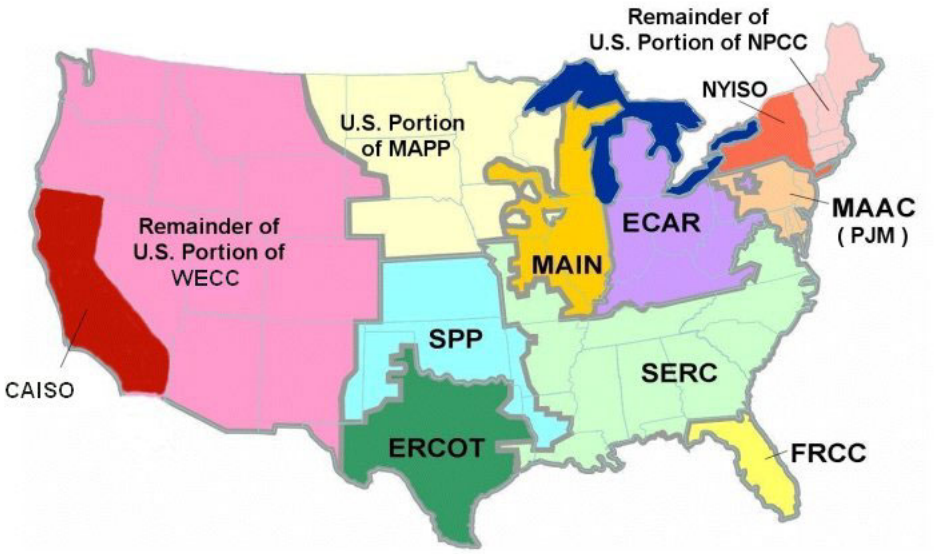
1.2 The Other GEMSET Regions

This report is one of a series describing the market conditions that exist, and that are forecast as part of the Department of Energy's (DOE) Government Energy Market Segment Evaluation Tool (GEMSET) project. Others in the series describe other regions, both competitive and regulated.

GEMSET forecasts for the FRCC and other areas will be presented in future reports in the series. Future reports on the FRCC will be issued where the GEMSET evaluation team makes reasoned conjecture of what might occur in the electric power market in this region in the future under a range of possible future energy prices and economic circumstances.

This is one of 12 GEMSET regional assessments. The GEMSET regional characterizations generally follow the U.S. portions of the NERC regions, excepting the Alaska Systems Coordinating Council (ASCC) and Hawaii, which are not modeled. Two of the NERC regions are broken into parts, one to separate out California and the other to separate out New York. The 12 GEMSET regions and their associated NERC regions are as shown in Exhibit 1-2.

Exhibit 1-2
The GEMSET Regions



The 12 GEMSET regions are:

- **CAISO** - The California Independent System Operator, a portion of the NERC's Western Electricity Coordinating Council (WECC).
- **East Central** - East Central Area Reliability Coordination Agreement (ECAR).
- **Florida** - Florida Reliability Coordinating Council (FRCC).
- **Mid-America** - Mid-America Interconnected Network (MAIN).
- **Mid-Continent** - the U.S. portion of the Mid-Continent Area Power Pool (MAPP).
- **Northeast** - the U.S. portion of NERC's Northeast Power Coordinating Council (NPCC), excluding New York
- **NYISO** - The New York ISO, a portion of NERC's Northeast Power Coordinating Council (NPCC).
- **PJM** - the Pennsylvania, New Jersey, Maryland Interconnect, which comprises the NERC's Mid-Atlantic Area Council (MAAC).
- **Southeast** - Southeast Electric Reliability Council (SERC).
- **Southwest** - Southwest Power Pool (SPP).
- **Texas** - Electric Reliability Council of Texas (ERCOT).
- **Western** - the U.S. portion of the NERC's Western Electricity Coordinating Council (WECC), excluding California (formerly WSCC).

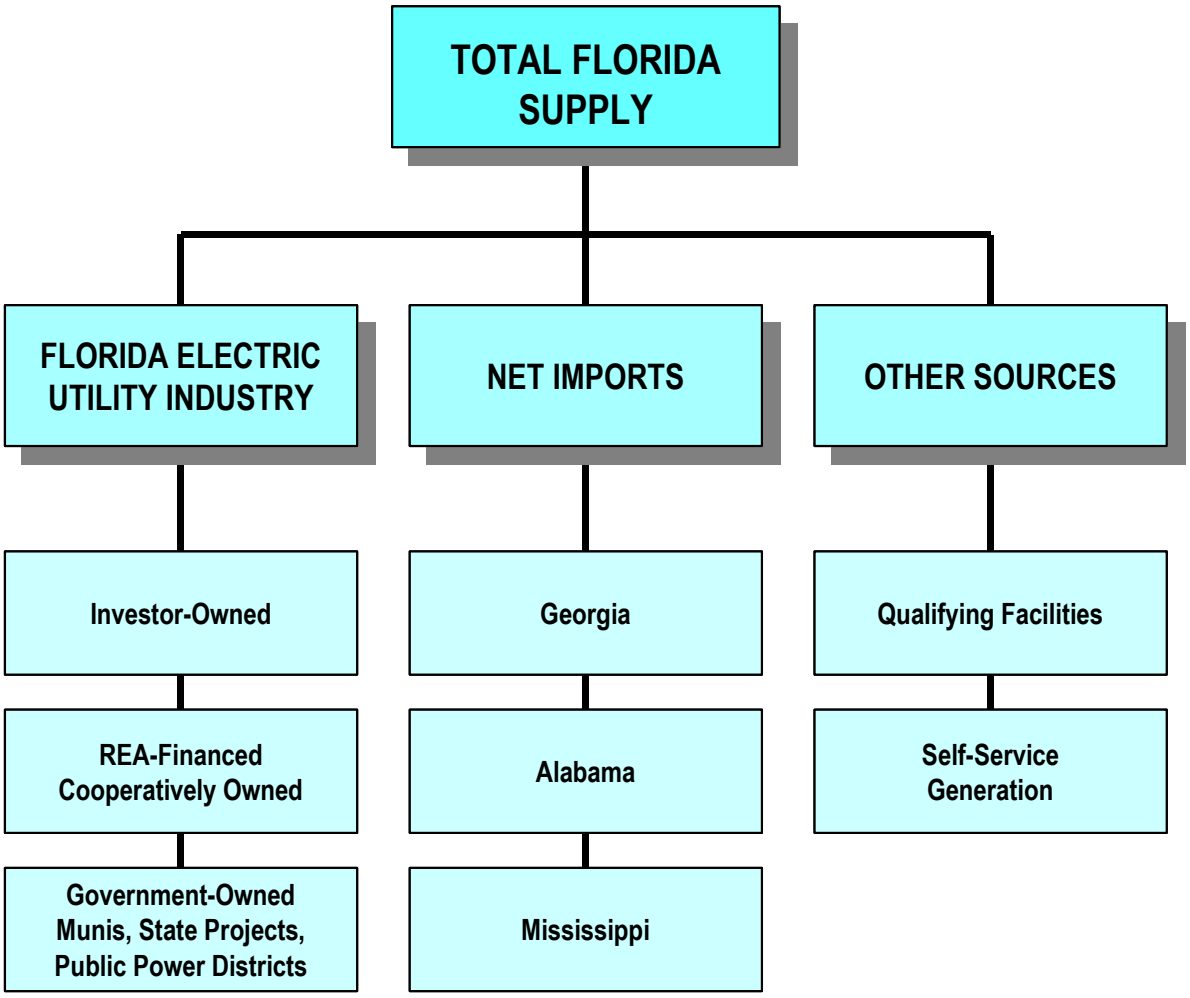
2. FRCC Region

2.1 Utility Ownership and Territory

The Florida Reliability Coordinating Council (FRCC) was established in 1996 to ensure reliable electric power to the nation's fourth largest state. This is a report about how electric power is sold in the region. It describes the regulated electric market in FRCC's territory. The report discusses the responsibilities of the FRCC, which is Florida's independent system operator (ISO), charged with ensuring a safe and reliable supply of electricity. As ISO, the FRCC is responsible for the state's electric integrity, unit dispatch and reliability, and administering the pricing mechanisms for delivery of power.

The FRCC jurisdiction encompasses almost all of the State of Florida. In Exhibit 2-1 the sources of electricity by ownership types are depicted for ease of understanding. Following that, Exhibit 2-2, Exhibit 2-3, and Exhibit 2-4 the three ownership types indicate the areas served in the State of Florida. The exhibits also indicate those utilities that have generation in their service territory.

Exhibit 2-1
Florida Sources of Electricity by Ownership



Source: Statistics of the Florida Electric Utility Industry 2000[1]

Exhibit 2-2
Investor (Privately) Owned Utilities

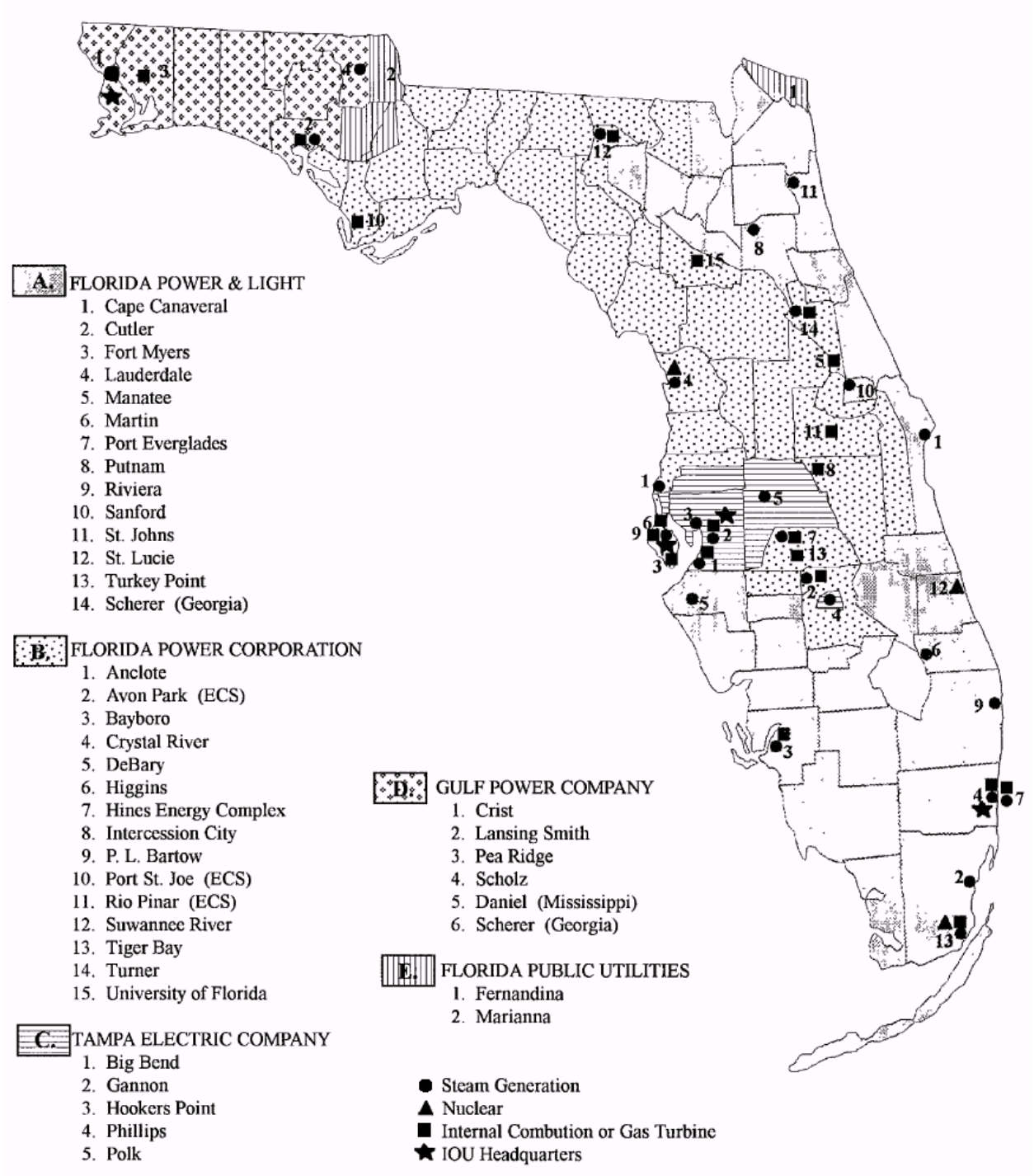


Exhibit 2-3
Rural Electric Cooperatives

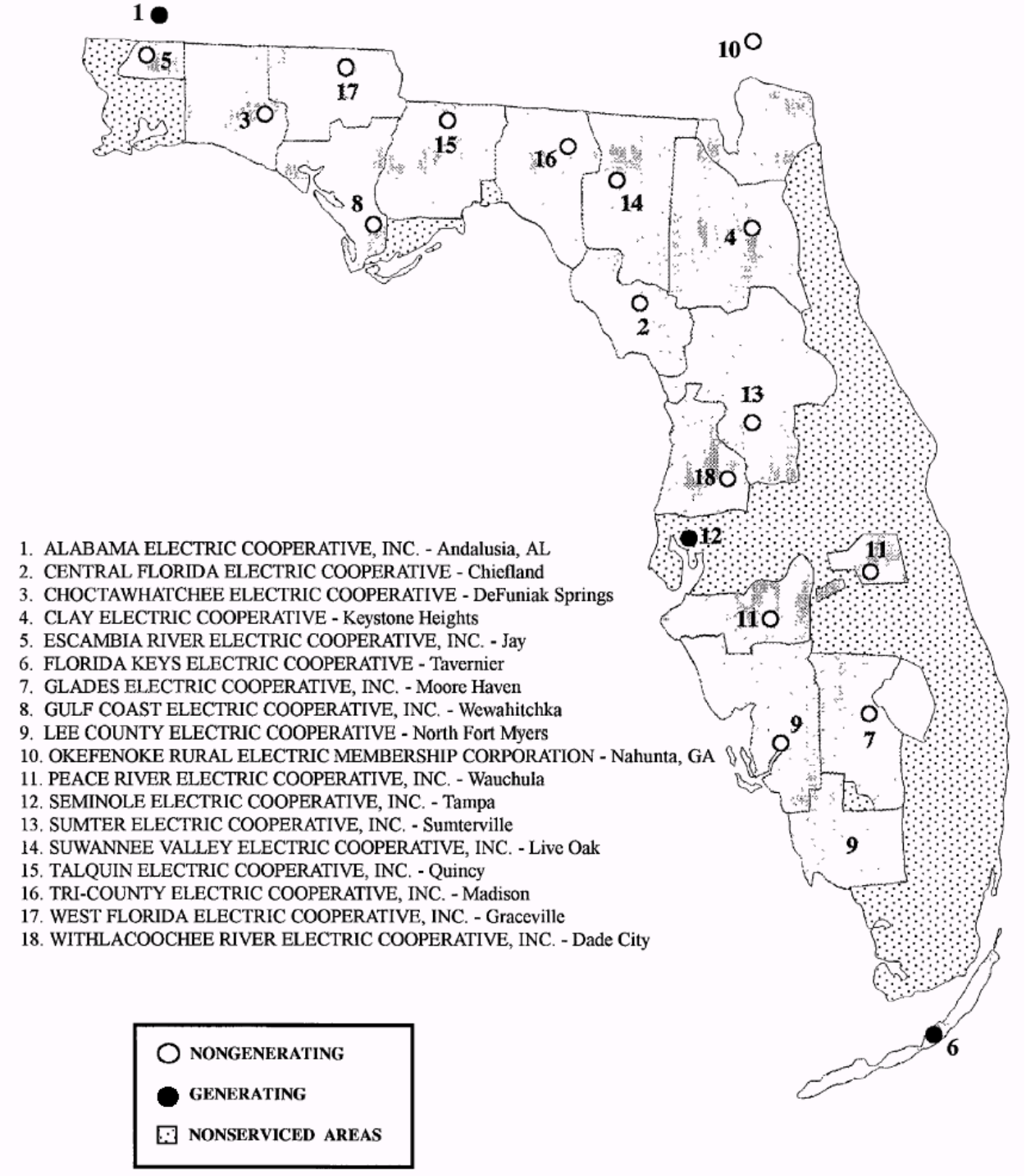
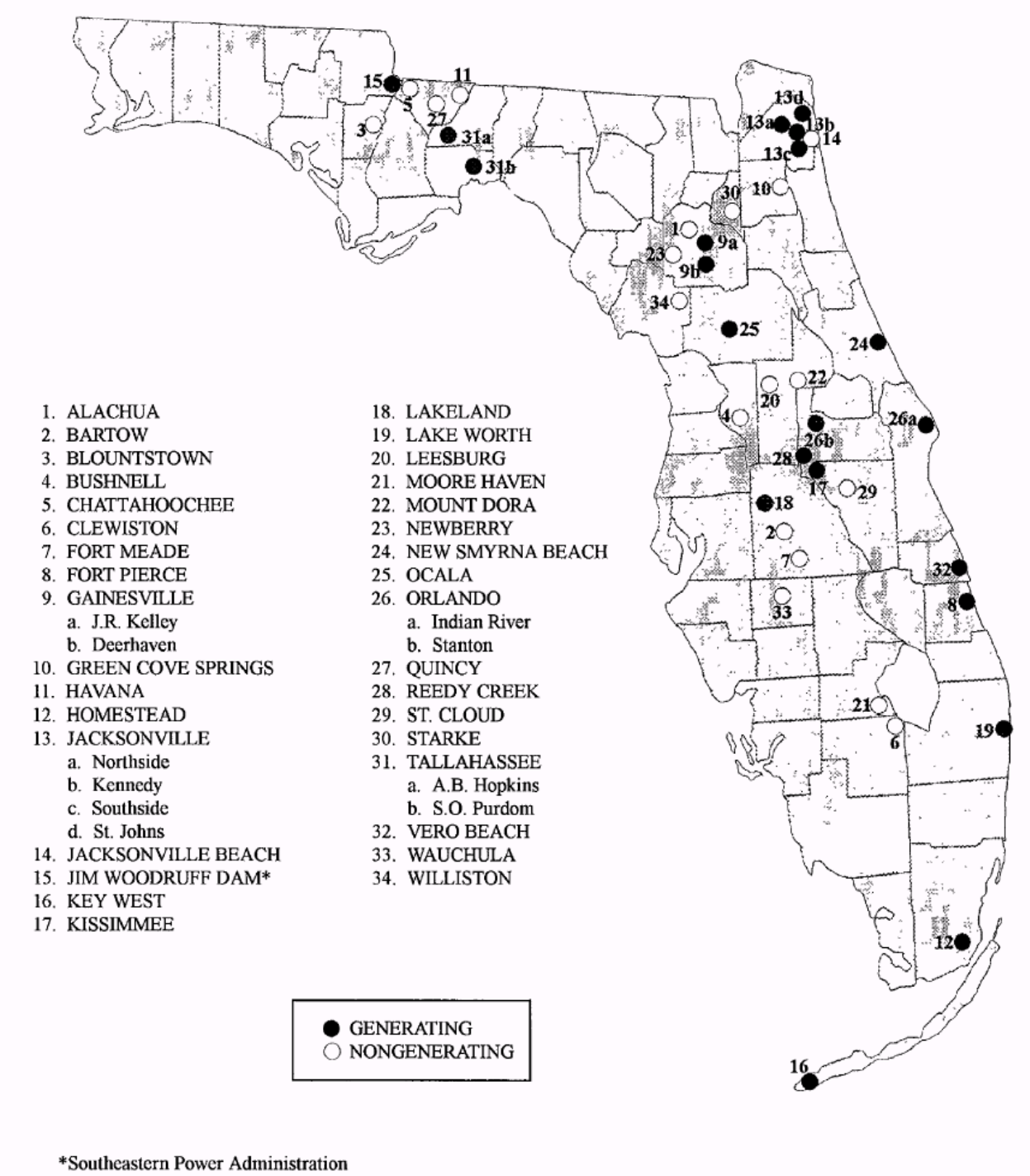


Exhibit 2-4
Government (Publicly) Owned Utilities



FRCC expects to have adequate generating capacity reserves and transmission system capability to meet the Regional reserve margin standard throughout the 2000–2009 assessment period.

FRCC ensures bulk electric system reliability in Florida. FRCC members regularly exchange information related to the reliability of the bulk electric system in both planning and operating areas. As a NERC Region, FRCC developed a formal reliability assessment process by which a committee and working group structure is utilized to annually review and assess reliability issues that either exist or have potential for developing. The Reliability Assessment Group (RAG) administers this process and determines the planning and operating studies to be performed during the year to address those issues.

RAG is also the mechanism for collecting, assembling, and assessing the Regional EIA-411 Report, and the FRCC Load and Resource Plan, which is submitted annually to the Florida Public Service Commission.

2.2 Membership

FRCC membership includes 32 members, of which 12 operate control areas in the Florida Peninsula. FRCC membership includes investor-owned utilities, cooperative systems, municipals, power marketers, and independent power producers. The region covers about 50,000 square miles. Exhibit 2-5 delineates the current members of the FRCC.

Exhibit 2-5
FRCC Members (current)

Calpine Corporation	Indiantown Cogeneration, L.P.
City of Homestead	JEA
City of Lakeland	Keys Energy Services
City of Lake Worth Utilities	Kissimmee Utility Authority
City of Tallahassee	Mirant Americas Development, Inc.
City of Vero Beach	Morgan Stanley Capital Group, Inc.
Clay Electric Cooperative	Ocala Electric Utility
Constellation Power Source	OUC
Duke Energy North America	Reedy Creek Improvement District
El Paso Merchant Energy	Reliant Energy Services
Florida Municipal Power Agency	Seminole Electric Cooperative, Inc.
Florida Power	Southeastern Power Administration
Florida Power & Light Company	Tampa Electric Company
Ft. Pierce Utilities Authority	The Energy Authority
Gainesville Regional Utilitites	Utilities Commission, New Smyrna Beach, FL
Gulf Power Company	Williams Energy Marketing & Trading

Source: Florida Public Service Commission, Statement of Agency Organizations & Operations[2]

2.3 Organization

The activities of FRCC are directed by its Executive Board. The Board is comprised of the top level executive from each member of FRCC.

The technical activities of FRCC are carried out by its Engineering and Operating Committees. These Committees and their subcommittees comprise managerial and technical representatives from the members of FRCC. These representatives provide the expertise necessary for the planning, engineering, and operating aspects of electric system reliability. Experienced, qualified representatives from the FRCC serve on the various NERC committee activities.

New and evolving market practices on electric system reliability are addressed by FRCC's Market Interface Committee. This Committee ensures that impacts of the electric industry's reliability standards are addressed from the commercial electricity market perspective.

2.4 Assessment Process

Within the FRCC Region, the members plan for facility additions on an individual basis. However, in addition to their own databases, they use data developed as a group under FRCC to assess the impact of neighboring systems and to adjust their plans accordingly. FRCC maintains power flow, stability, and short-circuit databases for the use of FRCC and its members.

Annually, the Reliability Assessment Group (RAG) reviews existing and expected short- and long-term conditions within the region. RAG, which includes planning, marketing, and operating members, makes recommendations to the Engineering and Operating Committees on the studies that should be conducted by the working groups for the next year. These reliability studies encompass regional generation and transmission adequacy and security including import/export capabilities. Upon completion of the reliability studies, reports that include results, conclusions, and recommendations are published. RAG monitors actions taken to meet reliability criteria as a result of all study/report recommendations. FRCC has also developed a compliance program to ensure member and regional compliance with FRCC and NERC standards.

2.5 Demand and Energy

FRCC is historically a winter-peaking region. However, because the region is geographically a sub-tropical area, a great number of high-demand days normally occur in the summer. Therefore, it is possible for the annual peak to occur in the summer. The projected annual net peak demand and the energy growth rates for Florida for the next 10 years are 2.3 and 2.1%, respectively.

2.6 Resource Assessment

The reserve margins for the 10-year assessment period (2000–2009) are at or above the FRCC reserve margin standard of 15%. The FRCC Resource Working Group (RWG), as part of its overall assessment of resource adequacy, determines reserve margin for both summer and winter based on system conditions at the time of the system seasonal peaks. These system peaks are assumed to be in the months of January and August for planning and assessment purposes. The reserve margin is determined by utilizing the net of the total peak demand (which includes the projected effects of conservation) minus the effects of exercising load management and interruptible loads during the peak demand periods.

FRCC members are projecting the net addition (i.e., additions less removals) of 14,068 MW of new capacity by the year 2010. Of this, 13,482 MW are projected to be natural-gas-fired combined cycles. For the summer of 2002 there was projected 48,611 MW of generating resources available to serve a firm peak demand of 39,469 MW. This represents a 23% reserve margin. This includes the benefit of reduction of 2,795 MW of load based on non-firm demand (demand side management). Elimination of the reduction in power requirements based on DSM (on the non-firm demand) results in the reserve margin being reduced to 15%.

To meet Florida's growing demand for energy, an acceleration of power plant construction is occurring. Over the next 10 years, peninsular Florida's electric utilities have under construction or plan to construct (or acquire) approximately 15,200 MW (summer rating) of new generating capacity. The increased reliance on generation that requires a short build time, such as combined cycle and combustion turbine units that burn natural gas, is evident in the assessment. This technology gives the demand-serving entities considerable flexibility in reacting to a dynamic marketplace in today's changing and competitive environment, though it does expose the operators to the uncertainties of future gas price. This changing environment will continue to place more emphasis on increased efficiency of existing units.

2.7 Transmission Assessment

The FRCC Stability Working Group (SWG) completed an assessment of outage performance out to year 2005 based on expected power import from the Southern Subregion of the Southeast Electric Reliability Council (SERC) to the FRCC, and found no problems. The SWG also completed an extensive investigation of delayed clearing faults. Only one potential violation of Category C performance requirements was identified. Although the overloads and low voltages can be eliminated by a series of operating procedures, modifications are being evaluated that would mitigate this potential violation.

In the past, the SWG studies identified a Central Florida/South Florida swing mode that was poorly damped for certain 230 kV and 500 kV circuit outages. The installation of power system stabilizers at key plants in 1998 improved damping of this swing mode to an acceptable degree in the near term. In the long term, some of the new units might require power system stabilizers.

The FRCC Transmission Working Group (TWG) recently completed a 10-year, intraregional study that made a comprehensive evaluation of the FRCC transmission system under normal and outage conditions for the years 2001, 2002, 2004, 2006, and 2008, based on the expected power import from the Southern Subregion of SERC to the FRCC. The results of this study indicate that any thermal or voltage violations can be successfully managed in the short term by operator intervention including generation redispatch, sectionalizing, reactive device control, and transformer tap adjustments. In the long term, violations of criteria can be resolved by planned transmission projects where there is adequate time to monitor trends and construct required network upgrades. Individual members plan to construct 416 miles of 230 kV electric transmission lines during the 2000–2009 assessment period.

The Florida/Southern Planning Task Force performs interregional transmission studies as required to evaluate the transfer capability between the Southern Sub-region of SERC and FRCC.

2.8 Operations Assessment

FRCC has contracted with Agent(s) to perform the duties of the FRCC Security Coordinator, which the FRCC has approved through its governance process. The Agent(s) act on behalf of the FRCC and will provide the following functions:

- Real-Time Operating Function
- Operations Planning Function
- State Capacity Emergency Coordination Function

These functions monitor system conditions and evaluate near-term operating conditions. FRCC has a detailed security process that gives the Agent(s) the authority to direct actions to ensure the real-time security of the bulk electric system in the region.

The Agent(s) use a region-wide security analysis program and a "look-ahead" program to evaluate current system conditions. These programs use databases that are updated with data from operating members on an as-needed basis throughout the day. The procedures in the security process are evaluated and updated on an ongoing basis to ensure regional reliability, conformance to FRCC procedures, and adherence to NERC standards and policies.

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3. Historical Data

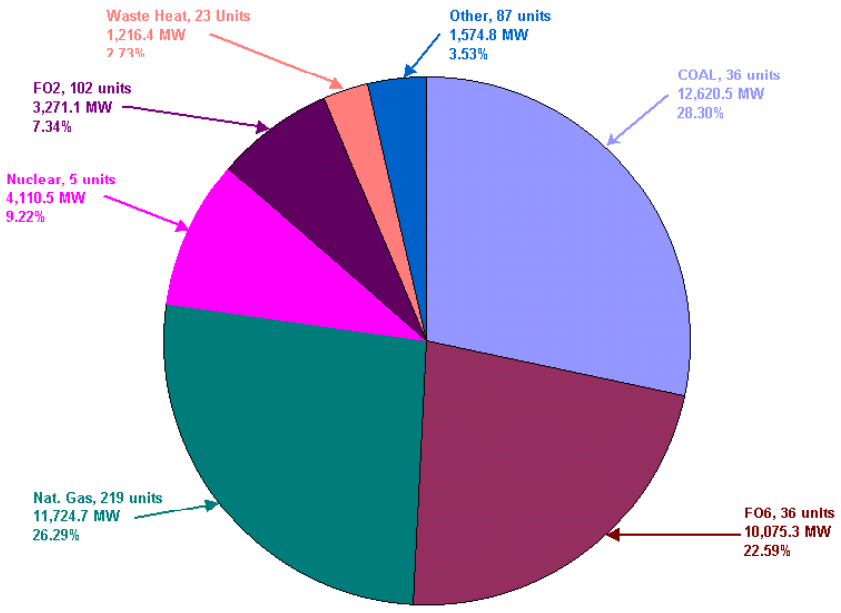
These data represent the latest available data as of October 2002, when this section was last revised. This historical information serves as a basis for understanding the existing mix of generation, the demand and energy requirements for each of the utilities and the FRCC as a whole, and the financial implications of rate base levels.

3.1 Generation Mix

Exhibit 3-1 provides the mix of generation by fuel type. Generation capability is split as follows:

- Over 60 percent of the total generation is from conventional steam plants fired by coal, gas, and oil,
- 25 percent is supplied by combustion turbines and combined cycles, and
- A little over 7 percent is supplied by nuclear plants.

Exhibit 3-1
FRCC Installed Capacity by Fuel Type



In meeting the demands of the system, the nuclear and coal are primarily used for baseload operations while the oil and gas units swing between intermediate load and peaking.

Within the FRCC region there are currently more than 500 operational electric generating units representing approximately 44,600 MW of installed capacity. Exhibit 3-2 gives a summary of the ownership of the generating units over the past 15 years between investor-owned utilities (IOU) and municipals, while Exhibit 3-3 provides the net generation.

Exhibit 3-4 provides specific details of the capability ownership by the utilities. As shown, approximately 75 percent of the total generation in FRCC is owned and operated by the IOUs. A complete listing of all identified operating units in FRCC is provided in the Appendix of this report.

Exhibit 3-2
Installed Nameplate Capacity by Ownership in FRCC

YEAR	TOTAL FOR STATE	INVESTOR-OWNED		MUNICIPALS, RURAL ELECTRIC COOPERATIVES, AND OTHER	
		QUANTITY	PERCENT OF TOTAL	QUANTITY	PERCENT OF TOTAL
1987	35,788	27,860	77.85	7,928	22.15
1988	36,544	28,200	77.17	8,344	22.83
1989	36,523	28,162	77.11	8,361	22.89
1990	37,532	27,658	73.69	9,874	26.31
1991	36,980	28,066	75.90	8,914	24.10
1992	36,988	27,501	74.35	9,487	25.65
1993	38,039	28,420	74.71	9,618	25.29
1994	39,084	29,529	75.55	9,555	24.45
1995	38,954	29,231	75.04	9,723	24.96
1996	40,334	30,337	75.22	9,996	24.78
1997	42,610	33,034	77.53	9,576	22.47
1998	42,363	32,094	75.76	10,270	24.24
1999	43,037	32,969	76.61	10,068	23.39
2000*	39,798	30,535	76.72	9,263	23.28
2001*	40,515	30,109	74.32	10,406	25.68

*In 2000 and onward, summer net capability is used instead of nameplate capacity as a more conservative measure of capability. Winter net capability averages approximately 5% higher than summer net capability.

SOURCES: 1985-1999, EIA Form 759
1985-1999, FPSC Form AFAD (RRR)-2
2000-2001, Regional Load and Resource Plan, FRCC

Source: Statistics of the Florida Electric Utility Industry 2000[1]

Exhibit 3-3
Net Generation in FRCC by Type of Ownership

YEAR	TOTAL FOR STATE (GWH)	INVESTOR-OWNED QUANTITY (GWH)	INVESTOR-OWNED PERCENT OF TOTAL	OTHERS** QUANTITY (GWH)	OTHERS** PERCENT OF TOTAL
1987	108,597	89,075	82.0	19,522	18.0
1988	124,062	98,952	79.8	25,103	20.2
1989	127,142	98,103	77.2	29,039	22.8
1990	125,468	96,491	76.9	28,976	23.1
1991	134,443	101,821	75.7	32,622	24.3
1992	140,060	104,776	74.8	35,284	25.2
1993	149,388	112,251	75.1	37,137	24.9
1994	152,779	117,134	76.7	35,645	23.3
1995	159,156	121,496	76.3	37,660	23.7
1996	157,946	120,267	76.1	37,679	23.9
1997	161,961	122,264	75.5	39,697	24.5
1998	181,147	139,909	77.2	41,238	22.8
1999	178,773	NR	-	NR	-
2000	178,253	NR	-	NR	-
2001	178,485	NR	-	NR	-

*Does not include Net Interchange and Non-Utility Generators generation. See Table 8.
**Includes municipals, rural electric cooperatives, and federally-owned utilities.

SOURCES: 1985-1999 EIA-759
1985-1999 FPSC Form AFAD (RRR)-2
1985-1999 A-Schedules
Table 8

Source: Statistics of the Florida Electric Utility Industry 2001[1]

Exhibit 3-4
Summer Net Capability by Prime Mover by Utility in FRCC

COMPANY NAME	HYDRO-ELECTRIC	CONVEN-TIONAL STEAM	NUCLEAR STEAM	COMBUSTION TURBINE	INTERNAL COMBUSTION	COMBINED CYCLE*	OTHER	UTILITY TOTAL
Florida Power & Light Company		8,302	2,939	1,896	12	3,479		16,628
Florida Power Corporation		3,882	774	2,464		689		7,809
Gulf Power Company		2,207		44				2,251
Tampa Electric Company		2,827		304	34	250	6	3,421
Florida Keys Electric Co-op					27			27
Florida Municipal Power Agency		244	74	126		54		498
Fort Pierce		82			6	31		119
Gainesville Regional Utilities		334	11	153		112		610
Homestead					53			53
Jacksonville		1,972		997	3			2,972
Key West				20	32			52
Kissimmee		21	6	26	16	100		169
Lakeland		445		37	6	323		811
Lake Worth		29		26	10	30		95
New Smyrna Beach			4	44	20			68
Ocala			11					11
Orlando		758	64	207				1,029
Reedy Creek					5	38		43
Seminole		1,316	15			488		1,819
St. Cloud					21			21
Tallahassee	11	351		56		233		651
US Corps of Engineers	39							39
Vero Beach		102				48		150
Alabama Co-op	8	665		343		153		1,169
Total State of Florida Utility	58	23,537	3,898	6,743	245	6,028	6	40,515
Total Nonutility Generators**								2,811
Total State of Florida								**43,326**

*Includes steam part of combined cycle.
**Does not include the capability of merchant plants

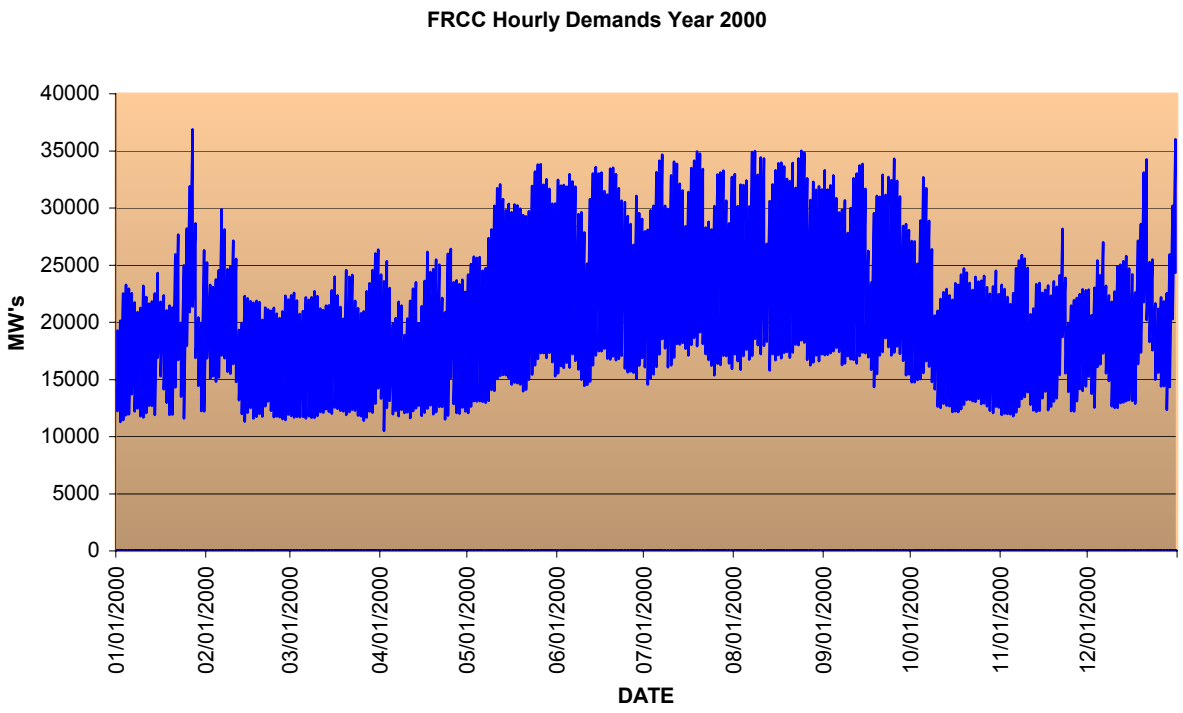
SOURCE: Regional Load and Resource Plan, FRCC

Source: Statistics of the Florida Electric Utility Industry 2001[1]

3.2 Demand

Exhibit 3-5 gives the year 2000 hourly loads for the FRCC region. These are the latest available data on hourly loads from the utilities and the regulatory bodies. There are several peaks during the winter months, but generally the peaks occur during the months of July through September. Later, in Section 3.2.3, "Peaking," monthly peak demands for each utility are presented.

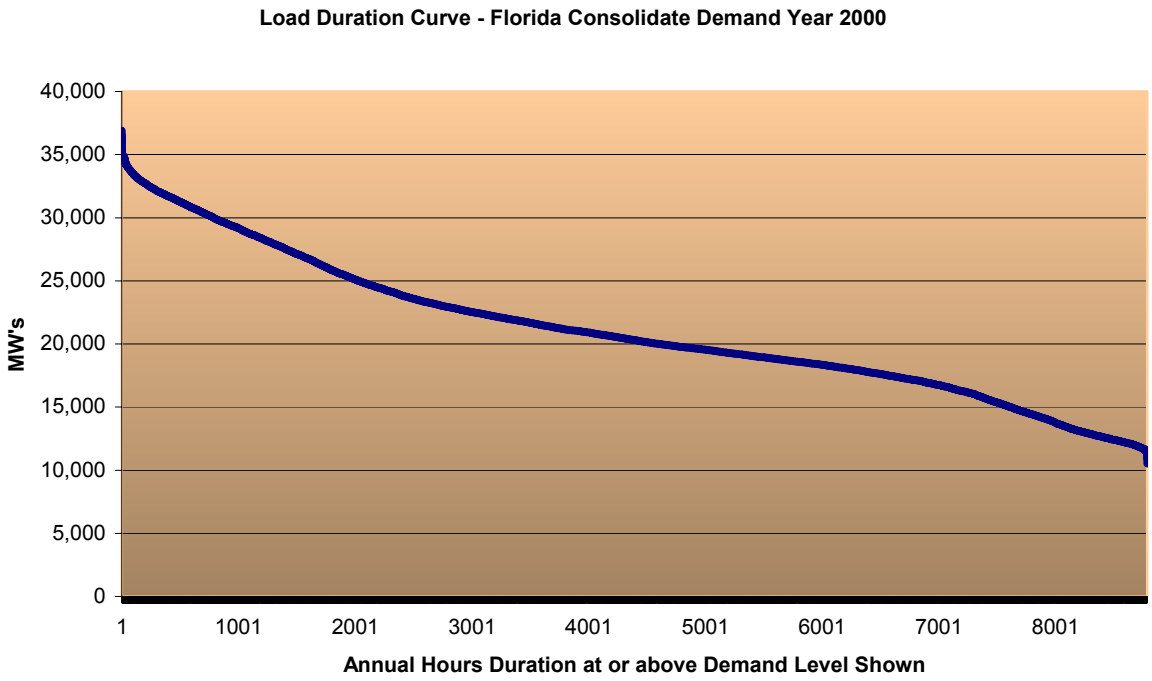
Exhibit 3-5
FRCC Hourly Demands



3.2.1 Load Duration Curve

The year 2000 load duration curve for the FRCC is presented in Exhibit 3-6 below.

Exhibit 3-6 Load Duration Curve – Florida Consolidated Demands (MW)



3.2.2 Baseload

As shown by the data listing the various units, there is over 16,000 MW of nuclear and coal-fired generation on the FRCC system, and almost 25,000 MW of gas- and oil-fired generation. The remaining 6,000 MW consists of a variety of fuels including hydro, wastes, and other types of fuels used primarily as energy producers, including waste heat from cogeneration and other industrial applications. Given that the minimum load on the system is about 13,500 MW, the typical daily requirement for baseload power will range around 18,000 to 22,000 MW, and should be covered by the four primary types of generation.

3.2.3 Peaking

For the year 2001, Exhibit 3-7 shows the peak demands for the period January 2001 through December 2001. These are the latest data that were available from the various utilities and the Florida Public Service Commission as of October 2002, when this was written.

Exhibit 3-7
Monthly Peak Demands by Utility (2001)

UTILITIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARLY PEAK
INVESTOR-OWNED SYSTEMS													
Florida Power & Light Company	18,199	13,268	14,611	15,831	16,280	18,342	17,803	18,754	18,707	15,981	13,781	14,590	18,754
Florida Power Corporation	8,922	6,942	5,494	6,291	7,141	7,628	7,577	7,790	7,278	6,122	5,159	6,239	8,922
Florida Public Utilities Company	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Gulf Power Company	2,106	1,582	1,601	1,706	1,948	2,068	2,223	2,121	2,098	1,737	1,488	1,743	2,223
Tampa Electric Company	3,782	2,852	2,512	2,903	3,125	3,437	3,238	3,451	3,227	3,025	2,459	2,534	3,782
GENERATING MUNICIPAL SYSTEMS													
Fort Pierce	120	90	92	98	102	108	109	115	104	98	84	90	120
Gainesville	364	285	259	298	363	386	389	409	367	334	367	280	409
Homestead	53	53	57	56	61	66	64	64	64	66	58	54	66
Jacksonville	2,665	1,981	1,833	1,898	2,201	2,308	2,372	2,389	2,200	2,032	1,579	2,223	2,665
Key West	108	101	114	111	112	127	128	129	125	125	98	102	129
Kissimmee	246	185	166	207	233	247	249	252	242	204	175	181	252
Lake Worth	76	63	68	72	71	80	83	88	82	75	62	69	88
Lakeland	655	508	431	472	494	542	539	546	519	471	360	465	655
New Smyrna Beach	91	67	59	65	71	77	77	76	74	65	46	63	91
Orlando	962	717	670	770	876	899	924	952	918	819	656	707	962
Reedy Creek	145	158	158	164	171	179	179	179	174	165	152	154	179
Starke	15	10	10	10	12	14	15	17	15	11	12	14	17
Tallahassee	521	394	356	394	456	489	520	519	475	403	351	406	521
Vero Beach	176	122	125	124	132	140	143	148	133	126	113	116	176
NONGENERATING MUNICIPAL SYSTEMS													
Alachua	18	15	13	13	15	16	16	17	16	14	12	14	18
Bartow	72	54	45	48	55	58	56	58	57	50	38	52	72
Blountstown	7	5	5	5	7	7	8	8	5	6	5	5	8
Bushnell	6	5	4	4	5	5	5	6	6	5	4	5	6
Chattahoochee	8	7	6	7	8	8	9	9	9	8	7	6	9
Clewiston	29	20	22	24	24	24	27	27	26	26	24	24	29
Fort Meade	13	9	8	8	9	8	9	9	9	7	6	8	13
Green Cove Springs	27	20	18	18	21	22	22	21	20	16	14	20	27
Havana	5	5	3	4	5	5	5	5	5	5	4	3	5
NONGENERATING MUNICIPAL SYSTEMS													
Jacksonville Beach	194	135	121	129	136	147	162	160	145	136	100	151	194
Leesburg	91	70	60	75	88	90	88	95	90	73	55	68	95
Moore Haven	4	3	3	3	3	3	3	4	3	3	2	3	4
Mount Dora	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Newberry	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ocala	267	201	183	210	254	263	263	263	26	217	179	201	267
Quincy	30	26	24	25	30	32	32	32	31	28	24	22	32
Wauchula	0	0	0	0	0	0	0	0	0	0	0	0	0
Williston	6	6	5	4	5	6	6	6	7	6	6	4	7
RURAL ELECTRIC COOPERATIVES													
Alabama Electric	357	284	243	194	245	255	275	294	285	250	207	305	357
Central Florida	118	89	77	70	88	94	88	101	92	77	74	101	118
Choctawhatchee	114	111	98	78	99	114	111	121	120	91	83	120	121
Clay	0	0	0	0	0	0	0	0	0	0	0	0	0
Escambia River	43	33	30	26	29	29	36	34	33	31	30	35	43
Florida Keys	107	101	111	117	106	125	126	130	127	114	92	95	130
Glades	77	62	51	58	45	50	52	52	53	44	41	50	77
Gulf Coast	78	61	51	40	49	54	53	60	58	52	43	66	78
Lee County	750	467	385	493	487	499	529	542	551	474	389	448	750
Peace River	111	87	67	75	78	79	80	89	85	69	62	74	111
Seminole	3,626	2,613	2,228	2,256	2,512	2,578	2,626	2,725	2,536	2,195	1,794	2,565	3,626
Sumter	514	397	339	337	383	367	371	393	393	321	259	374	514
Suwanee Valley	83	74	57	53	65	75	74	74	72	62	55	55	83
Talquin	253	193	174	144	173	171	163	181	156	127	118	212	253
Tri-County	59	53	41	39	43	48	53	51	51	45	40	38	59
West Florida	106	83	73	62	74	78	87	84	79	73	64	93	106
Withlacoochee River	908	698	551	498	556	562	630	597	605	489	395	557	908
Okefenoke	17	12	12	10	13	13	14	14	125	9	10	15	125

NR = Not reported
NA = Not applicable

SOURCE: FPSC Form AFAD (RRR)-1, 3

Source: Statistics of the Florida Electric Utility Industry 2001[1]

As shown, there are periods of peaks in the summer months, followed by relatively stable periods of daily spikes at reasonable levels during the other months of the year.

3.2.4 Annual Load Factors

For each generating utility in FRCC, an annual load factor for 2001 has been calculated and is shown in Exhibit 3-8.

Exhibit 3-8
Annual Load Factors for FRCC Region Generating Utilities

GENERATING UTILITIES	NET ENERGY FOR LOAD (GIGAWATT-HOURS)	PEAK LOAD (MEGAWATTS)	LOAD FACTOR (PERCENTAGE)
Florida Power & Light	98,404	18,754	59.9
Florida Power Corporation	40,933	8,922	52.4
Gulf Power Company	11,192	2,223	57.5
Tampa Electric Company	17,787	3,782	53.7
Florida Keys Electric	688	130	60.3
Fort Pierce	603	120	57.4
Gainesville	1,882	409	52.5
Homestead	346	66	59.9
Jacksonville	12,340	2,665	52.9
Key West	722	129	63.9
Kissimmee	1,155	252	52.3
Lake Worth	414	88	53.5
Lakeland	2,960	655	51.6
New Smyrna Beach	358	91	44.8
Orlando	4,925	962	58.4
Reedy Creek	1,191	179	76.1
Seminole Electric	13,294	3,626	41.9
Starke	75	17	51.3
Tallahassee	2,556	521	56.0
Vero Beach	720	176	46.7

SOURCE: FPSC Form AFAD (RRR)-1, 3 and Table 16.

Source: Statistics of the Florida Electric Utility Industry 2001[1]

3.2.5 Net Energy for Load

Exhibit 3-9 shows 15 years of energy requirements (1987 through 2001) in the FRCC. Only in the last two years has the FPSC been collecting data on energy generated by sources other than the utilities.

Exhibit 3-9
Net Energy for Load

	COAL		OIL		NATURAL GAS		NUCLEAR		HYDRO			OTHER SOURCES		
YEAR	GWH	PERCENT	GWH	PERCENT	GWH	PERCENT	GWH	PERCENT	GWH	PERCENT	SUBTOTAL	NUG	OTHER**	TOTAL
1987	53,390	49.2	19,886	18.3	16,238	15.0	19,049	17.5	32	0.0	108,595			
1988	56,614	45.6	26,448	21.3	14,592	11.8	26,198	21.1	210	0.2	124,062			
1989	63,744	50.1	26,150	20.6	17,417	13.7	19,814	15.6	17	0.2	127,142			
1990	62,110	49.5	26,617	21.2	15,920	12.7	20,572	16.4	249	0.2	125,468			
1991	66,037	49.1	31,844	23.7	17,472	13.0	19,062	14.2	28	0.0	134,443			
1992	58,836	42.0	38,733	27.7	17,744	12.7	24,693	17.6	54	0.0	140,060			
1993	61,000	40.8	44,870	30.0	18,064	12.1	25,403	17.0	51	0.0	149,388			
1994	62,511	40.9	43,553	28.5	20,420	13.4	26,216	17.2	80	0.1	152,779			
1995	65,714	41.3	32,185	20.2	33,483	21.0	27,726	17.4	47	0.0	159,156			
1996	70,008	44.3	33,060	20.9	30,496	19.3	24,333	15.4	49	0.0	157,946			
1997	74,219	45.8	32,561	20.1	33,123	20.5	22,000	13.6	58	0.0	161,961			
1998	73,184	40.4	46,430	25.6	31,319	17.3	30,168	16.7	46	0.0	181,147			
1999	78,413	43.9	33,550	18.8	34,964	19.6	31,772	17.8	74	0.0	178,773	12,820	8,781	200,374
2000***	76,050	42.7	32,763	18.4	36,878	20.7	32,555	18.3	7	0.0	178,253	12,461	18,372	209,086
2001	73,005	40.9	34,858	19.5	39,032	21.9	31,568	17.7	22	0.0	178,485	13,613	18,880	210,978

*Percentages are calculated for fuel sources only.

**Other includes inter-region interchange.

***2000 numbers revised slightly. 2000 numbers throughout the report are as originally released unless otherwise noted.

SOURCES: 1985-1999, EIA Form 759
1985-1999, FPSC Form AFAD (RRR)-2
1985-1999, A-Schedules
1999-2001, Regional Load and Resource Plan - State Supplement, FRCC

Source: Statistics of the Florida Electric Utility Industry 2001[1]

3.2.6 Consumption

For the year 2001, Exhibit 3-10 shows the consumption by the various classes of service for most of the utilities in the region. Surprisingly, the residential class is the largest class of service in the region, with over 50% of the total requirements. Next largest is the commercial class, followed by the industrial class. This is not typical of most utilities in the United States.

Exhibit 3-10
Consumption by Class of Service by Utility

(MEGAWATT-HOURS)
2001

UTILITIES	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER	TOTAL
Florida Power & Light	47,587,520	37,960,494	4,173,283	572,769	90,294,066
Florida Power Corporation	17,603,735	11,060,650	3,872,339	2,726,181	35,262,905
Florida Public Utilities	310,687	279,547	117,670	16,491	724,395
Gulf Power Company	4,716,406	3,417,428	2,018,206	21,206	10,173,246
Tampa Electric Company	7,594,089	5,685,303	2,328,707	1,367,948	16,976,047
Alachua	30,465	42,204	0	0	72,669
Bartow	125,461	22,444	113,163	9,801	270,869
Blountstown	5,445	10,746	0	746	16,938
Bushnell	8,803	8,994	9,718	0	27,514
Central Florida Co-op	312,794	35,621	32,154	29,387	409,956
Chattahoochee	12,066	4,465	25,910	1,312	43,753
Choctawhatchee Co-op	409,987	66,054	69,759	127	545,928
Clay Co-op	1,967,520	214,696	417,900	3,983	2,604,099
Clewiston	50,966	6,077	68,970	1,015	127,028
Escambia River Co-op	119,831	12,339	19,000	597	151,767
Florida Keys Co-op	349,613	104,653	156,136	28,347	638,748
Fort Meade	28,793	9,472	12	2,446	40,723
Fort Pierce	229,424	332,891	0	10,151	572,466
Gainesville	802,975	191,756	677,724	23,237	1,695,692
Glades Co-op	138,534	28,051	66,270	72,409	305,263
Green Cove Springs	33,914	10,433	53,545	2,547	100,438
Gulf Coast Co-op	215,548	49,441	0	2,427	267,416
Havana	11,899	9,649	0	1,217	22,765
Homestead	167,790	27,659	115,206	14,261	324,917
Jacksonville	4,883,826	3,628,409	2,886,626	562,244	11,961,105
Jacksonville Beach	436,327	87,720	165,844	13,114	703,005
Key West	301,965	70,004	298,369	4,392	674,731
Kissimmee	555,167	161,367	368,781	9,566	1,094,880
Lake Worth	214,199	78,021	76,590	6,682	375,492
Lakeland	1,310,381	212,824	942,957	99,615	2,565,778
Lee County Co-op	1,821,933	156,561	738,359	11,064	2,727,917
Leesburg	196,090	55,990	181,580	17,239	450,899
Moore Haven	9,441	1,857	5,076	281	16,655
Mount Dora	NR	NR	NR	NR	NR
New Smyrna Beach	212,510	44,564	80,998	2,945	341,017
Newberry	NR	NR	NR	NR	NR
Ocala	484,279	126,625	574,074	31,941	1,216,919
Okefenoke*	124,278	9,262	4,952	2,891	141,384
Orlando	1,639,395	3,095,047	0	484,308	5,218,750
Peace River Co-op	281,639	111,916	593	14,813	408,961
Quincy	43,658	35,274	70,308	3,608	152,848
Reedy Creek	150	13,684	1,081,999	4,546	1,100,380
Seminole Co-op	0	0	0	0	0
Starke	22,543	42,967	0	0	65,510
Sumter Co-op	1,264,763	129,594	332,053	1,109	1,727,520
Suwannee Valley Co-op	264,663	29,017	24,302	286	318,268
Tallahassee	959,097	184,233	580,804	706,880	2,431,013
Talquin Co-op	661,040	144,772	60,322	6,356	872,490
Tri-County Co-op	145,257	24,276	36,755	1,496	207,784
Vero Beach	339,366	81,805	241,656	27,618	690,445
Wauchula	NR	NR	NR	NR	NR
West Florida Co-op	295,616	31,071	9,594	12,010	348,291
Williston	9,962	5,964	11,775	1,243	28,945
Withlacoochee Co-op	2,044,411	198,036	599,471	12,757	2,854,674
Respondent Total**	101,356,220	68,351,928	23,709,510	6,947,609	200,365,268
FRCC State Total					197,113,000

*Okefenoke sells power in Florida and Georgia; 2001 figures reflect Florida customers only.

**Respondent total does not include information from every utility, but for those that respondec, it includes sales to other public authorities.
For these reasons, respondent totals are not comparable to FRCC totals.

SOURCES: FPSC Form AFAD (RRR)-1,4.
Regional Load and Resource Plan, State Supplement, FRCC.

Source: Statistics of the Florida Electric Utility Industry 2001[1]

3.3 Rate Base Considerations

The rates of the investor-owned utilities (IOUs) in Florida are established through a process whereby their investment in generation, transmission, and distribution, plus ancillary expenditures necessary to supply electricity to their customers, is used to develop what is called rate base. Their calculated rate base serves as the basis for determining how much revenue they need to generate each year from their rates to the various consumers. These complex calculations to establish rate base are conducted through rate hearings and other studies that comprise a Cost-of-Service assessment.

Exhibit 3-11 depicts the allowed rate of returns for each of the IOUs in Florida (except for Florida Public Utilities, which has two small service territories in northern Florida). A rate base average of the adjusted rate of return is about 8.88% in year 2001, a number that could be used as representative of the allowed return in FRCC.

Exhibit 3-11
Allowed and Actual Rate of Return

1997-2001

	1997	CHANGE (%) 1997-1998	1998	CHANGE (%) 1998-1999	1999	CHANGE (%) 1999-2000	2000	CHANGE (%) 1999-2000	2001
AVERAGE PER BOOK RATE OF RETURN									
Florida Power & Light	9.79 %	3.37	10.12 %	(3.66)	9.75 %	6.46	10.38 %	1.06	10.49 %
Florida Power Corporation	6.26	36.26	8.53	6.10	9.05	(14.25)	7.76	37.50	10.67
Gulf Power Company	7.76	5.15	8.16	(1.59)	8.03	1.99	8.19	(5.98)	7.70
Tampa Electric Company	8.71	(0.92)	8.63	1.62	8.77	4.22	9.14	(3.17)	8.85
AVERAGE ADJUSTED RATE OF RETURN									
Florida Power & Light	9.08 %	0.55	9.13 %	(5.59)	8.62 %	1.86	8.78 %	0.00	8.78 %
Florida Power Corporation	6.12	41.67	8.67	4.15	9.03	2.88	9.29	2.91	9.56
Gulf Power Company	7.90	1.65	8.03	0.87	8.10	0.37	8.13	(3.94)	7.81
Tampa Electric Company	8.74	(0.92)	8.66	(4.97)	8.23	4.74	8.62	1.28	8.73
REQUIRED RATES OF RETURN*									
Florida Power & Light	8.92 %	(1.12)	8.82 %	(8.62)	8.06 %	0.87	8.13 %	(0.74)	8.07 %
Florida Power Corporation	8.48	(1.06)	8.39	3.46	8.68	2.53	8.90	1.91	9.07
Gulf Power Company	7.65	(0.26)	7.63	(0.92)	7.56	0.79	7.62	(0.66)	7.57
Tampa Electric Company	8.25	(0.48)	8.21	(0.97)	8.13	2.71	8.35	(0.84)	8.28
ADJUSTED JURISDICTIONAL YEAR-END RATE BASE (MILLIONS)									
Florida Power & Light	$9,059	(3.72)	$8,722	0.47	$8,763	4.77	$9,181	10.48	$10,143
Florida Power Corporation	3,494	5.83	3,698	(6.62)	3,453	3.34	3,568	(0.25)	3,560
Gulf Power Company	882	(1.11)	872	2.42	893	1.51	907	5.78	959
Tampa Electric Company	2,082	4.07	2,167	0.63	2,181	(2.13)	2,134	1.37	2,163

*Average Capital Structure - Midpoint

SOURCE: December Earnings Surveillance Reports

Source: Statistics of the Florida Electric Utility Industry 2001[1]

Along with the rate base estimates comes the uses of revenues by the IOUs. Exhibit 3-12 shows the percentages of revenues for each of the described costs and the total annual revenues generated over the past five years. Fuel and O&M generally represent about 50% or more of the uses of the revenues generated by the IOUs.

While rate base in a regulated environment is important to the financial return to the utility, the addition of generation is reflected in that rate base only after its construction, when the unit is capable of generation. Net income is the amount, after all expenses, that is the determining factor in the approved rate-of-return.

Exhibit 3-12
Uses of Revenue

		CHANGE (%)		CHANGE (%)		CHANGE (%)		CHANGE (%)	
	1997	1997-1998	1998	1998-1999	1999	1999-2000	2000	1999-2000	2001
FLORIDA POWER & LIGHT									
Fuel	22.22 %	(3.64)	21.41 %	7.23	22.96 %	5.01	24.11 %	24.86	30.10 %
Other Operation and Maintenance	32.06	(3.20)	31.03	6.37	33.01	0.06	33.03	(4.73)	31.46
Depreciation and Amortization	13.74	42.85	19.63	(16.85)	16.32	(6.11)	15.32	(21.58)	12.02
Taxes Other Than Income Taxes	9.67	(3.17)	9.36	7.01	10.02	(5.54)	9.46	(1.24)	9.35
Income Taxes	6.06	(7.94)	5.58	(3.57)	5.38	2.08	5.49	(4.38)	5.25
Interest	3.70	(16.53)	3.09	(12.58)	2.70	2.45	2.77	(9.50)	2.50
Utility Net Operating Income Less Interest	10.14	(2.41)	9.90	(2.89)	9.61	2.15	9.82	(5.13)	9.31
TOTAL OPERATING REVENUE (Millions)	$6,132.05	3.81	$6,365.83	(4.84)	$6,057.49	5.01	$6,360.80	17.54	$7,476.65
FLORIDA POWER CORPORATION									
Fuel	22.14 %	(4.22)	21.21 %	8.56	23.02 %	19.97	27.62 %	(3.33)	26.70 %
Other Operation and Maintenance	44.96	(16.54)	37.53	(2.89)	36.44	3.76	37.81	(13.38)	32.75
Depreciation and Amortization	16.31	(12.35)	14.30	(9.69)	12.91	(19.69)	10.37	28.19	13.29
Taxes Other Than Income Taxes	7.91	(2.83)	7.69	0.31	7.71	(4.32)	7.38	0.85	7.44
Income Taxes	3.49	51.73	5.30	6.88	5.66	(9.92)	5.10	15.95	5.91
Interest	4.51	5.62	4.76	(3.64)	4.59	(5.31)	4.35	(15.27)	3.68
Utility Net Operating Income Less Interest	5.50	67.80	9.23	4.78	9.67	(23.66)	7.38	38.53	10.23
TOTAL OPERATING REVENUE (Millions)	$2,448.44	8.16	$2,648.23	(0.59)	$2,632.58	9.82	$2,891.18	7.01	$3,093.76
TAMPA ELECTRIC COMPANY									
Fuel	31.27 %	(6.43)	29.26 %	(3.69)	28.18 %	(1.90)	27.64 %	(2.49)	26.96 %
Other Operation and Maintenance	26.37	9.23	28.80	10.02	31.69	11.06	35.19	0.21	35.27
Depreciation and Amortization	11.77	6.12	12.49	(23.22)	9.59	(13.99)	8.25	21.87	10.05
Taxes Other Than Income Taxes	7.63	2.18	7.80	4.41	8.14	(10.54)	7.28	1.56	7.40
Income Taxes	7.30	(16.25)	6.11	(7.09)	5.68	6.88	6.07	(3.11)	5.88
Interest	4.68	(8.79)	4.27	29.08	5.51	(9.76)	4.97	(13.71)	4.29
Utility Net Operating Income Less Interest	10.98	2.61	11.27	(0.42)	11.22	(5.64)	10.59	(4.08)	10.16
TOTAL OPERATING REVENUE (Millions)	$1,201.70	3.80	$1,247.33	(2.67)	$1,214.00	11.68	$1,355.81	4.49	$1,416.73
GULF POWER COMPANY									
Fuel	28.90 %	5.03	30.35 %	2.16	31.01 %	(2.60)	30.20 %	(8.40)	27.67 %
Other Operation and Maintenance	33.74	0.28	33.84	0.63	34.05	5.22	35.83	9.24	39.14
Depreciation and Amortization	9.61	3.91	9.99	(0.96)	9.89	(2.41)	9.65	0.25	9.68
Taxes Other Than Income Taxes	8.27	(4.34)	7.91	(2.92)	7.68	1.90	7.83	(2.63)	7.62
Income Taxes	5.91	(26.49)	4.34	1.50	4.41	(6.12)	4.14	(0.52)	4.12
Interest	4.77	2.43	4.89	0.90	4.93	(2.10)	4.83	(9.40)	4.37
Utility Net Operating Income Less Interest	8.80	(1.34)	8.68	(7.63)	8.02	(6.16)	7.53	(1.56)	7.41
TOTAL OPERATING REVENUE (Millions)	$625.86	3.94	$650.52	3.62	$674.10	5.97	$714.32	1.52	$725.20

SOURCE: FERC Form 1

Source: Statistics of the Florida Electric Utility Industry 2001[1]

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4. Specifics of FRCC and FPSC Operations

The FRCC market comprises a number of private and public utilities in the state of Florida designed to meet the FRCC's responsibility of ensuring an efficient, reliable electric supply. In order to meet that criterion, the FRCC works with the Florida Public Service Commission (FPSC) and the other state agencies that regulate the electric utility industry. While the industry is still mostly regulated, the FRCC is under Federal Energy Regulatory Commission's (FERC) various orders to free up the transmission network in allowing open access to the grid. The actual process includes planning and approval of new generation and transmission upgrades and improvements to ensure that the state's electricity requirements are met into the future. This section describes the operations of the FRCC and the FPSC.

4.1 Planning Process

In the electric industry in Florida, the FPSC reviews regulated utilities' 10-year site plans to assess the utilities' abilities to meet Florida's energy needs over that 10-year planning horizon. The Public Service Commission (PSC) also considers petitions for determination of need for electric power plants and transmission lines as a way of ensuring that the state's power needs are being met. The level of activity in this area has increased significantly over the past 2 years.

The FPSC also participates in formal and informal proceedings relating to long-range electric-utility bulk power supply operations and planning; power plant and transmission line siting, including the siting of power plants owned by non-traditional generating entities. Electric and natural gas safety and service quality, including complaints; electric utility conservation goals and programs; and emergencies due to operational events or weather are also part of the planning process.

Exhibit 4-1[3] shows the process in which the FPSC evaluates the programs and plans of the various organizations when accessing the need for new power facilities.

Exhibit 4-1
Statutory Criteria for Reviewing 10-Year Site Plans

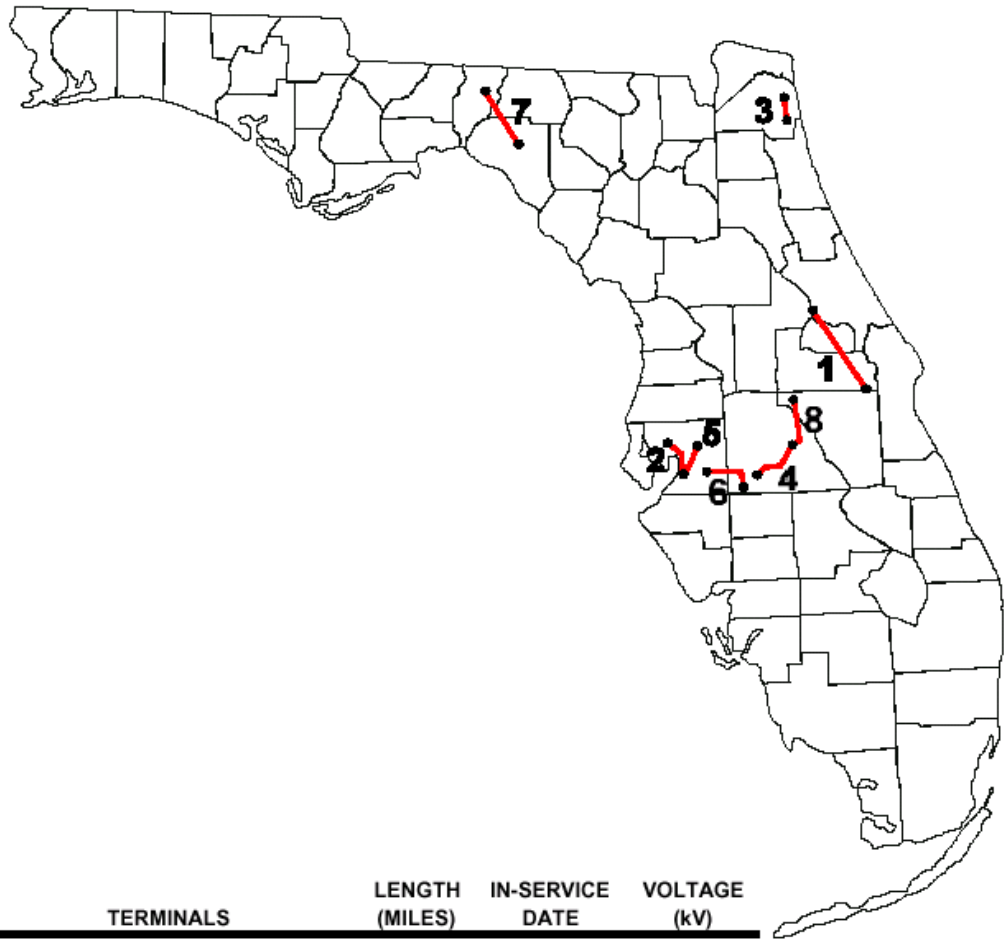
REQUIREMENT	ACTION
Review the need for electrical power in the area to be served	Reviewed load forecasts, demand-side management (DSM) assumptions, and reliability criteria.
Review possible alternatives to the proposed Plan	Reviewed DSM assumptions, fuel forecasts, and sensitivities to the base-case expansion plan.
Review anticipated environmental impact of proposed power plant sites	Solicited comments from DEP regarding environmental impact and compliance. Comments are summarized within this report.
Consider views of local and state agencies regarding water and growth management issues	Solicited comments from the Department of Community Affairs (DCA), water management districts, and regional planning councils. Comments are summarized within this report.
Determine consistency of Plan with the State Comprehensive Plan	Evaluated energy-related aspects of the Comprehensive Plan. Reviewed comments provided by DCA and by regional and local planning agencies on growth management and Comprehensive Plan issues. Comments are summarized within this report.
Review Plan for information on energy availability and consumption	Reviewed load forecast data and methodologies used to arrive at load and energy forecasts.

4.1.1 Transmission Plans

Exhibit 4-2[3] shows the transmission additions or upgrades planned for Florida over the next 10 years. While not significant in terms of miles of new additions, expansion of the transmission capability will reinforce the existing system and allow for additional generation to be added, improving reliability. Existing transmission circuits in miles of 230 kV and above in 2001 were 6,669 miles in the FRCC region. Planned additions to these facilities totaled an additional 618 miles (582 miles of 230 kV and 36 miles of 500 kV transmission line) through the year 2010. The FRCC has completed a Transmission Protection Adequacy Review Study and concluded that the interconnected transmission systems in the region meet the performance requirements for all contingencies studies. A stability study for the period 2001 – 2005 based on expected power imports from SERC found no problems. A transmission study performed for the period 2001 – 2010 indicated that operational procedures such as generation re-dispatch, sectionalizing, planned load shedding, reactive device control and transformer tap adjustments could successfully mitigate all projected demand voltage violations in the first 5 years of the study. As regional transmission operators are formed, FRCC will update processes and

procedures to ensure that complete transmission system assessments are performed. FRCC and GridFlorida are presently working together to ensure a smooth transition to the new structures.

Exhibit 4-2
Proposed Major Transmission Lines for Florida (2000 – 2009)



	UTILITY	TERMINALS	LENGTH (MILES)	IN-SERVICE DATE	VOLTAGE (kV)
1	FPL	Poinsett - Sanford (2 lines)	45	June, 2001	230
2	TECO	Gannon - Juneau	15	June, 2003	230
3	JEA	Center Park - Greenland	19	Nov., 2003	230
4	FPC	Hines - W. Lake Wales (2 lines)	21	May, 2005 May, 2009	230
5	TECO	Gannon - Davis	15	June, 2005	230
6	TECO	Polk - Lithia [3]	22	Oct., 2006	230
7	FPC	Perry - Drifton	35	May, 2007	230
8	FPC	Intercession City - W. Lake Wales	30	May, 2007	230

4.2 External Factors Affecting the Plans

Because the future is uncertain, there are external factors that may affect the viability of the 10-Year Site Plan (TYSP). Three potential factors are:

- Electric utility restructuring,
- The implications of the recently issued Florida Energy 2020 Study Commission, and
- Natural gas availability.

The following discussion elaborates on these factors.

4.2.1 Electric Utility Restructuring

Several federal actions have encouraged a restructuring of the electric industry nationwide. These actions are discussed below. In 1992, Congress enacted the Energy Policy Act of 1992 (EPAct). The EPAct authorized the FERC to order utilities to transmit, over their own transmission lines, power from wholesale entities. The EPAct also requires that a utility refusing to provide wholesale transmission service must show good cause for such refusal. EPAct is considered to be the catalyst for current restructuring of the electric utility industry.

In April 1996, FERC issued Order No. 888, which required that all transmission-owning public entities make their facilities available to any user in a fair, non-discriminatory manner. Open access transmission was facilitated by utilities through "functional unbundling," a process by which generation and transmission functions within a single company are separated. FERC intended that Order No. 888 also encourage the development of independent system operators (ISOs) to manage the real-time actions of transmission systems.

In response to concerns over the transparency of real-time information, FERC issued Order No. 889, which required the development of an open-access same-time information system (OASIS). OASIS is an interactive database system designed to provide instantaneous information on the availability and price of transmission links between generation centers and load centers. The FRCC implemented Peninsular Florida's OASIS, known as FLOASIS, in November 1996.

In December 1999, FERC issued Order No. 2000, which encouraged the development of regional transmission operators (RTOs). In Order No. 2000, FERC concluded that RTOs would offer advantages over the present system because they will lead to enhanced regional reliability and speed the development of a competitive, wholesale electricity market. FERC also expects that RTOs will remove any potential for discriminatory transmission system access.

On October 16, 2000, Peninsular Florida's three major utilities – Florida Power Corporation (FPC), Florida Power & Light (FPL), and Tampa Electric Company (TECO) – filed a joint RTO

proposal with the FERC. The RTO, to be known as GridFlorida, has petitioned FERC to become a RTO, serving the needs of Peninsular Florida. As filed with FERC, GridFlorida would be a for-profit transmission company that would own transmission facilities ("Transco"), including the transmission facilities currently owned by FPL and Tampa Electric. For the past several months, development activities have been focusing on concerns expressed by the FPSC. On March 20, 2002 the joint applicants made a filing with the FPSC revising the form and function of GridFlorida to address perceived problems. A Commission workshop addressing the modified proposal was held in May 2002; the Commission began considering the proposal in August 2002.

The recommendations from the 2020 Study Commission included that retail competition in the electrical market should not be considered until after the development of an effectively competitive wholesale market. The Commission suggested this competitive retail market should be addressed later, by another Study Commission in 2004, which would evaluate the status of the wholesale market at that time and on this basis recommend whether to proceed with a competitive retail market. Such a decision to remain regulated, or become competitive could be strongly influenced by the direction that might be taken in FERC's recent NOPR on standard market design (SMD) for competitive markets.

4.2.2 Florida Energy 2020 Study Commission

Pursuant to Executive Order No. 2000-127, Governor Jeb Bush established the Florida Energy 2020 Study Commission (Study Commission) on May 3, 2000 to propose an energy plan and strategy for Florida. Consisting of 20 persons with various areas of expertise, the Study Commission first met in September 2000 to study the major issues affecting the future of the electric industry in the state. In December 2001 the Commission submitted its final report. In accordance with the Governor's executive order, the Study Commission's report presented a strategy for assuring that Florida will have an adequate, reliable, and affordable supply of electricity. They approached this through the adoption of five goals:

- Promoting Energy Efficiency and Public Relations
- Assuring an Adequate and Reliable Supply of Energy
- Improving Energy Infrastructure
- Preserving Florida's Environment
- Preparing Florida for New Technologies and Renewables

For each goal, the Commission set out a number of related objectives to be achieved. Furthermore, to address the objectives, strategies were provided and a set of tasks listed to respond to each strategy.

4.3 Reliability Requirements

4.3.1 Reliability Criteria

Utilities plan their electric system to meet peak demand plus allow for planned maintenance and forced outages of generating units, as well as variation from base-case weather or forecasting assumptions. To determine when additional future resources are required, utilities generally use two types of reliability criteria: ***deterministic*** and ***probabilistic***. The reliability criteria used by each utility who filed a 10-year site plan (TYSP) are shown in Exhibit 4-3.

Exhibit 4-3
Reliability Criteria for Reporting Utilities in Florida

UTILITY	RESERVE MARGIN		PROBABILISTIC CRITERIA	
	Percent	Season	LOLP	EUE/NEL
Florida Power Corporation (FPC)	15% [4]	Sum/Win	0.1	---
Florida Power & Light Company (FPL)	15% [4]	Sum/Win	0.1	---
Gulf Power Company (Gulf)	13.5% [5]	Sum	---	---
Tampa Electric Company (TECO)	15% [4] (7% supply-side) [6]	Sum/Win Sum	---	1%
Florida Municipal Power Agency (FMPA)	18%	Sum	---	---
Gainesville Regional Utilities (GRU)	15%	Sum/Win	---	---
JEA	15%	Sum/Win	---	---
Kissimmee Utility Authority (KUA)	15%	Sum/Win	---	---
City of Lakeland (LAK)	20% 22%	Sum Win	---	---
Orlando Utilities Commission (OUC)	15%	Sum/Win	---	0.5%
City of Tallahassee (TAL)	17%	Sum	---	---
Seminole Electric Cooperative (SEC)	15%	Sum/Win	---	1%

Source: Review of Electric Utility 2000 Ten-Year Site Plans, Florida Public Service Commission[4].

- **Deterministic Criteria**. Most utilities use a deterministic reliability criterion. The primary criterion, reserve margin, is the amount of capacity that exceeds firm peak demand. This value may be expressed in megawatts or as a percentage above firm peak demand. Reserve margin comprises demand-side resources (e.g., non-firm load that can be reduced or dropped at times of peak demand) and supply-side resources (e.g., generating units or firm capacity purchases). Some utilities employ a secondary criterion, supply-side reserve margin, which indicates the level of reserves that are to be made up of generating units or firm capacity purchases. However, reserve margin indicates only one measure of reliability for a utility's system only at the single peak hour of the summer or winter season. Thus, it cannot capture the

impact of random events occurring throughout the year, such as the resilience of the system to make up the loss from a forced outage of a large generating unit.

- **Probabilistic Criteria**. Because of the limitations of reserve margin, many utilities also use probabilistic reliability criteria. The most common one is loss of load probability (LOLP), expressed in days per year. The LOLP criterion used for planning purposes is typically 0.1 days per year, meaning that, on average, a utility will likely be unable to meet its daily firm peak load on one day in 10 years. The LOLP criterion allows a utility to calculate and incorporate its ability to import power from neighboring utilities. However, LOLP does not account for the magnitude of a forecasted capacity shortfall.

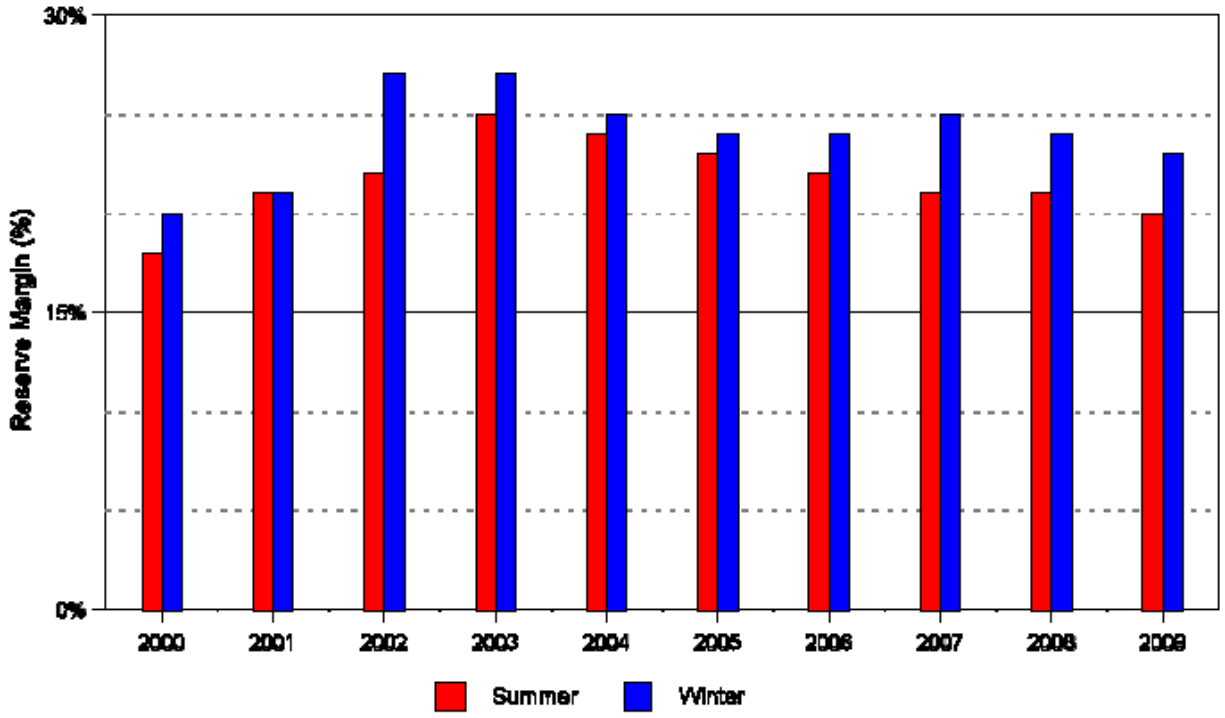
  A second probabilistic method, expected unserved energy (EUE), accounts for both the probability *and* magnitude of a forecasted energy shortfall. Utilities that use the EUE criterion usually calculate a ratio of expected unserved energy to net energy for load (EUE/NEL), and the typical criterion is 1 percent EUE/NEL. This means that, on average, a utility designs its systems so that it will likely be able to serve all but 1 percent of its annual net energy requirements in a given year.

4.3.2 Role of Reliability Criteria in Resource Planning

Once reliability criteria are established, a utility applies its load forecast to its existing system resources. Reliability concerns arise if a utility's reserve margin falls below established criteria or the LOLP exceeds one day in 10 years. In those instances, the utility must build or purchase additional capacity (supply-side options) or reduce peak load through additional cost-effective conservation programs (demand-side options). An integrated resource plan is developed by combining supply-side and demand-side reduction options to satisfy the utility's reliability criteria in a cost-effective manner. This underscores the fact that reliability criteria are an essential element in deciding the timing of planned resource additions, or establishing demand reduction programs.

It should be noted that as recently as 10 years ago, a 15% reserve margin criterion was approximately equivalent to an LOLP of 0.1 day per year. Currently, utility studies show that the 15% reserve margin arguably correlates to LOLP values much lower than 0.1 day per year. It is believed that these questionable LOLP values result from the high unit availability / low forced outage rates experienced by today's newer generating units. Therefore, reserve margin has become the primary criterion driving the need for additional capacity. Exhibit 4-4 provides the expected reserve margin for all utilities in the state of Florida.

Exhibit 4-4
Utility Forecasts of Reserve Margin for the State of Florida



Source: Review of Electric Utility 2000 Ten-Year Site Plans, Florida Public Service Commission.[3]

4.3.3 FPSC Commission Actions Affecting Reliability

In recent years, the FPSC Commission had an ongoing concern with the decreasing level of reserve margins forecasted by Florida's utilities and the impact of these reserve margins on reliability. However, much of the Commission's concerns on reliability have been mitigated by two actions:

Reserve Margin Agreement (FPC, FPL, and TECO) – The FPSC Commission opened Docket No. 981890-EU to investigate the adequacy of reserve margins for Peninsular Florida's utilities. All generating utilities in Peninsular Florida were part of the investigation. Gulf was not included in the investigation because Gulf's service territory is not contained in Peninsular Florida.

The FPSC Commission concluded its reserve margin investigation when, on November 30, 1999, it approved an agreement by FPC, FPL, and TECO to adopt a 20% reserve margin planning criterion starting in the summer of 2004. The reserve margin agreement does not extend to municipal and cooperative electric utilities, which can therefore carry their current level of reserves. However, since FPC, FPL, and TECO make up approximately 75% of Peninsular Florida's generation, all municipal and cooperative utilities could carry exactly the FRCC minimum 15% reserve margin and the weighted average reserve margin for Peninsular

Florida would still be nearly 19% due to the increased 20% reserve margins carried by FPC, FPL, and TECO. It should be noted that Florida's municipal and cooperative utilities typically carry reserves exceeding 20% in most years.

Announcement of New Merchant Plant Capacity in Florida – There is considerable interest in constructing merchant plants in Florida. Under FERC Order 888, such units must be provided non-discriminating transmission access. Merchant plant developers almost always plan to build natural gas-fired combustion turbine or combined cycle generators. Recent technological improvements in these types of generation during periods when the price of natural gas is low result in low production costs for these types of generators. This gives merchant plant owners who can obtain a long-term supply of low-cost natural gas an opportunity to sell electricity profitably in the wholesale market. Unless specific contracts exist, load-serving Florida utilities have no obligation to purchase electricity from merchant plants. Likewise, absent specific contracts, merchant plants have no obligation to sell electricity to load-serving Florida utilities. As a practical matter, most merchant plant sales will likely be made in-state because of transmission line constraints on the Southern Company-FRCC interface and the low marginal cost of coal-fired electricity in the Southern Company region.

During periods of capacity shortages, merchant plants may enhance the reliability of Peninsular Florida's grid without putting retail ratepayers at risk for the costs of the facility. When a merchant plant is unavailable due to planned or forced outages, or is uneconomical to operate due to high fuel costs, the merchant plant's owners bear the costs rather than retail customers; they have powerful financial incentive to keep their units operating at high availability.

The Commission approved a determination of need for the 514 MW combined cycle unit proposed by Duke New Smyrna. This decision was overturned by the Florida Supreme Court, which stated that the Commission does not have jurisdiction to grant a Determination of Need for generating units whose capacity is not fully committed to the retail load of an electric utility. The Commission petitioned the Supreme Court for a rehearing on its decision. On September 28, 2000, the Supreme Court reaffirmed its order overturning the Commission's decision.

Several companies have announced plans to construct, over the next 5 years, combustion turbine merchant plants in Florida totaling approximately 5,370 MW of capability. These units, which do not require certification under the Power Plant Siting Act, are summarized in Exhibit 4-5. Many merchant plant companies have also requested interconnection studies from investor-owned utilities.

Exhibit 4-5
Announced Combustion Turbine Merchant Plant Additions

Owner	Size (MW)	Location	In-Service Date
Reliant Energy	537	Osceola County	2001
Calpine	100	Polk County (Auburndale)	2001
El Paso	680	Hardee County	2001
El Paso	480	Pasco County	2001
Constellation	900	Brevard County	2002
Dynegy, Inc.	500	Osceola County	2002
IPS Avon Park	510	DeSoto County (Avon Park)	2002
Decker Energy	510	Polk County (Ft. Meade)	2002
Duke Energy Ft. Pierce	640	St. Lucie County (Ft. Pierce)	unknown
Granite Power Partners II	510	Hardee County	unknown
TOTAL	**5,367**		

Source: Review of Electric Utility 2000 Ten-Year Site Plans, Florida Public Service Commission[3]

As noted previously, the FRCC did not include any combustion turbine merchant plant additions in its 2000 Regional Load and Resource Plan. Therefore, the Commission has compiled a listing of announced combustion turbine merchant plant additions. If the owners of these combustion turbine merchant plants were to sign firm capacity contracts to sell the entire 5,370 MW to load-serving utilities, Peninsular Florida reserve margins could potentially increase from 19 to 34% (summer 2002) and from 24 to 38% (winter 2002/03).

The potential impact of merchant plants on capacity planning is thus considerable; their influence on reserve requirements, and on the use of utility equipment in the region, will have to be resolved in the future.

4.4 Competitive Market Oversight

The FPSC is addressing competitive market structure and ratemaking issues in power industries that have traditionally been considered monopolies, yet are now transitioning into a competitive market. New technologies and large customers are two of the catalysts for the change to competition. The advent of new technologies allows new market entrants and new opportunities for established utilities. In addition, large customers may benefit with increased competition by having more options as to whose services they use. Each of these changes shifts the dynamics of the market and requires the FPSC to reevaluate the current pricing, regulations, and constraints currently in place. This reevaluation activity does not just occur when major industry changes

occur. Instead, competitive issues frequently arise in conjunction with the other two major regulatory roles of the FPSC: establishing rates and monitoring service issues.

The electric industry in Florida is on the verge of major changes. The FPSC has been monitoring the development of the GridFlorida proposal to form a regional transmission operator (RTO) in the state. The creation of GridFlorida will require changes in the way existing utilities do business. The FERC believes that having electric transmission operated by independent entities will facilitate competition in the wholesale electric market. The FERC hopes that this will lead to lower retail prices in the long term. While the FPSC does not have jurisdiction to establish wholesale transmission rates, the potential effect on retail consumers of this effort to develop a competitive wholesale market is considerable. Thus, the FPSC has faithfully attended the formation meetings and provided comments to the FERC.

The Governor's Energy 2020 Study Commission looked at transitioning the state to a competitive power market. From the outset this commission believed in the importance of addressing wholesale power competition separate from retail power sales. The study did make recommendations that are expected to transition the state to a competitive wholesale market. The Study Commission did not make recommendations with respect to retail competition but did indicate the belief that when the state's wholesale market is effectively competitive and there is better understanding of retail market issues, the time would be right to give retail customers the choice of electrical suppliers. The commission recommended a subsequent study in 2004 to readdress the issue of a competitive retail market at that time.

During the year 2000, Florida experienced increasing pressure to expand its wholesale power market. This occurred due to Duke Energy's attempts to gain permission to build a merchant plant in the state, and Florida's general concern as to whether there are sufficient power resources in light of California's power outages. The FPSC is exploring the potential effects on wholesale competition of having a greater amount of Florida's power generated by producers other than the traditional utilities. In addition, the traditional utilities are considering "spinning off" their existing generation facilities into separate affiliates and then purchasing power back from those affiliates. That action would break up the traditional, vertically integrated electric industry. While competition for retail electric customers currently is not part of the regulatory framework in Florida, assessment of competitive implications and considerations is very much a part of the FPSC's work.

The FPSC also monitors electric utility mergers to ensure that ratepayers will not be unduly burdened. In 2000, the FPSC monitored two major mergers: the first, between Florida Progress Corp. (parent of Florida Power Corporation) and CP&L Energy, Inc. (parent of Carolina Power & Light). The creation of Progress Energy out of that merger proved a significant change for the electric industry. FPSC staff prepared summaries of the filing and drafted comments for the FERC. The second merger, between Florida Power & Light Company (FPL) and Entergy, would have created the largest electric utility in the United States. At the end of 2000, this merger was pending at the FERC, however, on April 2, 2001, the companies called off plans for what would have been a $9 billion merger. During 2000, however, the FPSC reviewed that filing as well, and intervened for monitoring purposes.

The FPSC also has had to consider competitive issues regarding the utilities' customers. In order to give the utilities the flexibility to preserve their customer base, the FPSC approved economic development and/or load retention tariffs for the state's four largest investor-owned electric utilities. One pending case concerns a challenge to the propriety of offering different rates to two manufacturers served by the same utility, and whether such an offering constitutes "undue discrimination."

4.5 Rate Base/Economic Regulation

The FPSC establishes and monitors earnings levels for regulated electric, natural gas, water, and wastewater companies. In addition, there is one remaining telephone company under rate-of-return regulation. Whenever a company believes that its earnings are below a reasonable level, it can petition the FPSC for a change in rates. The FPSC conducts an extensive review of the company's earnings and determines what are the fair levels of rates and earnings for the company. The review consists of an analysis of the company's books and records, as well as a determination of what a reasonable return is for the company. The review also includes an analysis of the actual rates charged by the company, allocates revenue requirements between classes of customers, and develops appropriate rate structures within rate classes.

In addition to reviewing a company's request for a rate increase, the FPSC also monitors each company's earnings levels to reduce the likelihood that any company receives excessive earnings. Each company files an annual report, which is reviewed to determine its level of earnings for the prior year. If, based on prior year earnings, it appears that a company's earnings will be excessive in the following year, the FPSC will fully analyze that company's books and records and, when appropriate, reduce its rates. During that overearnings review, the FPSC may place earnings "subject to refund" if the later review indicates the company is overearning.

4.5.1 Electric

In addition to annual reviews, the larger electric and natural gas companies also file earnings information on a more frequent basis, with some companies filing quarterly, semi-annually, or monthly, depending upon their size. These more frequent filings allow the FPSC to take quicker action if it appears that a company may be over earning, and allow consumers' rates to be reset to reflect that review.

While three of Florida's four largest investor-owned electric utilities have agreements in place that freeze base rates, the FPSC devotes considerable resources to various tariff, rate, and other economic issues. Reviews are made of fuel, capacity, conservation, environmental costs; these are considered in cost-recovery-clause dockets, special contracts, new tariff offerings, conservation program approvals, and revision, depreciation, amortization, and decommissioning studies are just some of the many aspects of economic regulation involving electric and natural gas utilities that are regularly pending before the FPSC.

During 2000, a significant case in the area of economic regulation for the electric industry was Florida Power Corporation's filing of a petition requesting a determination of need for its Hines Unit 2 plant. FPSC staff testified regarding the policy issue of obligating ratepayers on a long-term basis for a plant that could become uneconomical during its useful life. A petition of need for the 530 MW plant was ultimately approved in a vote by FPSC Commissioners on December 19, 2000. Again, in April 2001, demonstrating its commitment to ensuring that Florida maintains an adequate and reliable power supply well into the future, the FPSC approved a new plant. This siting approval was for Stanton Unit A, to be located at the Curtis H. Stanton Energy center located east of Orlando in Orange County. The facility will be a natural-gas-fired, combined cycle unit with a capacity of 633 MW.

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5. Generation in FRCC

This section discusses how electric generation capacity is managed within FRCC, and how the owners of that capacity are compensated. The planning process is described in the following:

- Section 5.1, "Existing Units in FRCC," documents all of the existing units now in the FRCC;
- Section 5.2, "Planned Generation," discusses the plans of the various utilities in meeting the needs of their consumers;
- Section 5.3, "Generation Selection," discusses the types of generation units being selected by Florida's generating companies; and finally,
- Section 5.4, "Status of Need Determinations and Site Certifications," is a summary of those generating units that have received a Determination of Need from the Commission but have yet to be placed into commercial operation.

5.1 Existing Units in FRCC

As part of the regional characterizations, the GEMSET Team collects data on each generating unit in a particular region. The Appendix to this report lists all of the identified units in the FRCC as of 2002. This information is used by the GEMSET Team to develop pricing and other information when evaluating future plans in this region. The units in this list are stacked in increasing order of the GEMSET Team's presumption of GEMSET estimates of production costs; the lower operating cost units are listed first, with increasingly costly units following.

Inasmuch as the FRCC is the first of the regulated characterizations undertaken by the GEMSET Team, there is an element of how GEMSET forecasts pricing and production costing that has surfaced due to the procedures and programs that must be followed by the region's utilities. In the situation facing regulated utilities, the procedure for adding new generation is not so much a market pricing function, as one based on need to meet certain reliability standards established by the FPSC.

These standards are based primarily on the calculated reserve margins in a particular utility's territory where existing units, conservation, and demand side management programs are all evaluated against the expected load growth in the area. Therefore, unlike those regions where a competitive market exists, the GEMSET assessment of addition of new generation is a utility-by-utility function encompassing the above-described factors. Its actual cost impact of units on the

ratepayers is ultimately reviewed by the regulators and judged to be cost effective and reasonable by the FPSC.

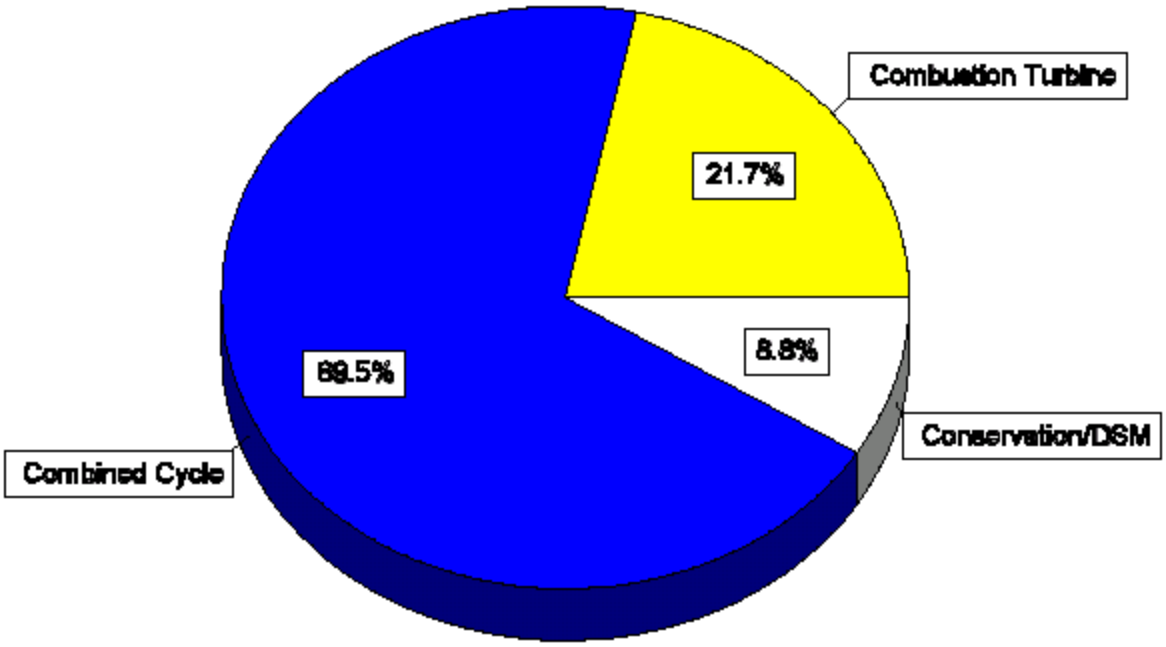
5.2 Planned Generation

Based on the approved demand and energy forecasts by the state's utilities, various additions to the generation fleet have been approved by the FPSC. Those new additions plus capacity upgrades or changes to existing units and retirements are listed below in Exhibit 5-1[3] and Exhibit 5-2[3].

Exhibit 5-1
Planned New Generating Additions, Changes in Capacity at Existing Sites, and Unit Retirements (2000-2009)

	SUMMER CAPACITY (MW)	WINTER CAPACITY (MW)
NEW ELECTRIC UTILITY GENERATING UNIT ADDITIONS		
Combined Cycle	8,485	9,406
Combustion Turbine	3,401	3,986
Coal	288	288
TOTAL	**12,174**	**13,680**
CAPACITY CHANGES AT EXISTING ELECTRIC UTILITY SITES (repowering, fuel conversion, cold standby)		
Combined Cycle	2,180	2,521
Combustion Turbine	101	52
Coal	-517	-581
Oil & Gas Fossil Steam	-350	-403
TOTAL	**1,414**	**1,589**
ELECTRIC UTILITY UNIT RETIREMENTS		
Combustion Turbine	-273	-314
Oil & Gas Fossil Steam	-813	-826
TOTAL	**-1,086**	**-1,140**
EXPIRATION OF ELECTRIC UTILITY FIRM CAPACITY CONTRACTS (with non-utility generators)		
Cogeneration [1]	-376	-376
Independent Power Producers [2]	-593	-593
TOTAL	**-969**	**-969**
TOTAL *NET* ELECTRIC UTILITY ADDITIONS	**11,533**	**13,160**

Exhibit 5-2
Chart Showing Electric Utility Resource Additions (2000-2009)

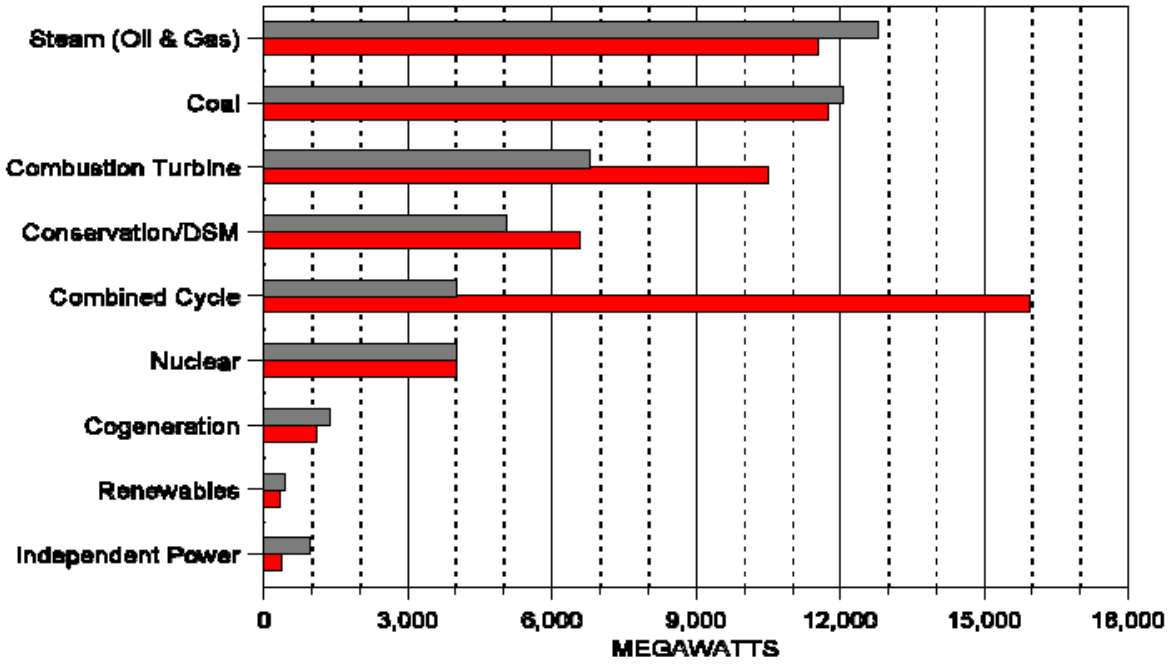


5.3 Generation Selection

Florida's utilities supply electricity from many generating unit types. However, generating units in Florida were fueled primarily by oil prior to the early 1970s. While oil-fired generation still provides 19% of Florida's electricity at present, the oil embargoes of the 1970s and today's higher fuel prices forced utilities to turn more to domestic fuels: coal, nuclear, and natural gas.

Exhibit 5-3[3] illustrates the historical and forecasted energy generation mix by fuel type for Florida's electric utilities. Over the next 10 years, Florida's utilities are forecasting a substantial increase in natural gas-fired generation as the emphasis shifts away from oil-fired and coal-fired generating units. Nearly all of this capacity is expected to come from efficient, gas-fired combined cycle and combustion turbine units. Coal-fired generating units are not considered a viable option for most of Florida's electric utilities because of high construction costs, although Lakeland has one in its TYSP. Likewise, additional nuclear power plants are not considered a viable option in Florida's future, primarily because of high construction costs and uncertainty over spent fuel disposal.

Exhibit 5-3
Electric Utility Resource Mix by Plant Type -- Present and Future



Source: Review of Electric Utility 2000 Ten-Year Site Plans, Florida Public Service Commission[3]

5.3.1 Natural Gas

This growth in generation fueled by natural gas cannot occur without similar growth in the infrastructure to deliver a reliable and acceptable-cost supply of that fuel to generators. Peninsular Florida's utilities project a substantial increase in natural gas-fired generation over the next ten years, increasing from the present approximately 18.6% up to 44.9% of all energy generated in year 2010. The Energy 2020 Study Commission presented a comparison of the energy mix as it is projected to change between the year 2000 and 2010 and into 2020 as shown in the charts below. Exhibit 5-4 and Exhibit 5-5 demonstrate the dramatic increase in the dependence on natural gas as it grows from 18.6% in 2000 to 55.5% in the year 2020.

The increase is due primarily to planned combined cycle and combustion turbine unit additions. In addition, all proposed unit repowerings and unit additions by non-utility generators are expected to use natural gas. Projections of increased natural gas consumption do not include the proposed new merchant plants that have been announced this year. See related Section 6.2.2, "Natural Gas Availability," page 6-7.

Exhibit 5-4
Energy Mix by Fuel Type 2000 – 2010 – 2020

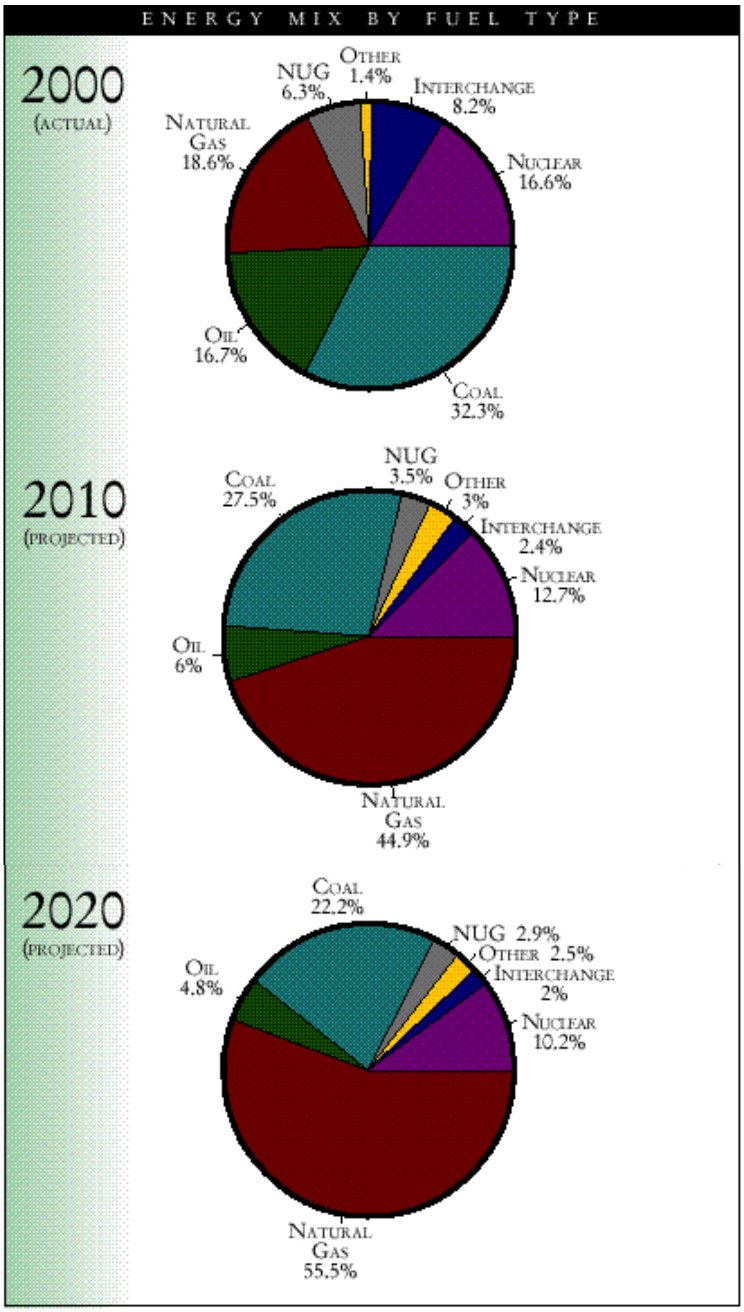
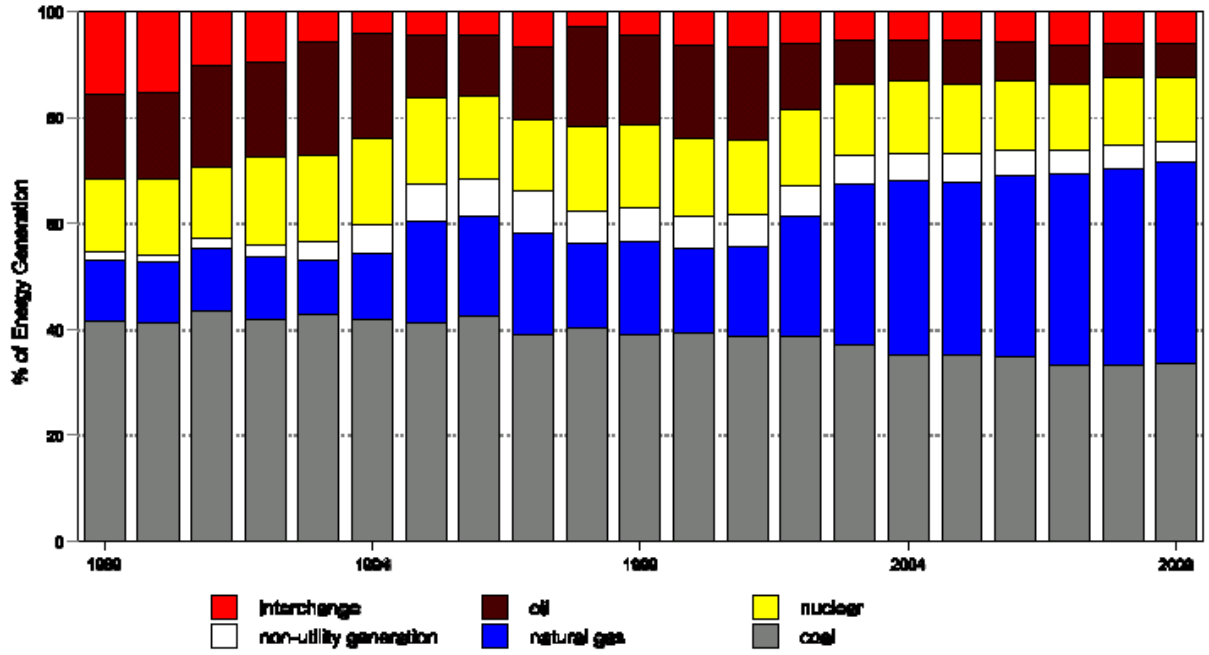


Exhibit 5-5
Percent of Energy Generation by Fuel Type



5.4 Status of Need Determinations and Site Certifications

The FPSC Commission granted a Determination-of-Need for several generating units in recent years. Some of these units have also been certified under the Power Plant Siting Act by the governor and cabinet, acting as the Power Plant Siting Board. The following is a summary of those generating units that have received a Determination-of-Need from the Commission but have yet to be placed into commercial operation.

5.4.1 Utility-Owned Generating Units

- **Kissimmee Utility Authority / Florida Municipal Power Agency – Cane Island Unit 3**

  In September 1998, the Commission granted joint need petition, by KUA and FMPA, to jointly build and operate a 250 MW gas-fired combined cycle unit at the existing Cane Island site in Osceola County. Cane Island Unit 3 was certified under the Power Plant Siting Act in November 1999. This siting application was further

modified in May 2000. Construction began immediately thereafter with a planned June 2001 in-service date.

- **Gulf Power Company – Smith Unit 3**

  In June 1999 the commission granted Gulf's petition and a certification application was submitted to build a 574 MW natural gas-fired combined cycle unit at the existing Lansing Smith site in Bay County. Smith Unit 3 was certified under the Power Plant Siting Act in July 2000. Gulf began construction on the unit in November 2000 to meet an in-service date of June 2002.

- **Orlando Utilities Commission / Kissimmee Utility Authority / Florida Municipal Power Agency / Southern Florida – Stanton Site**

  In April 2001, the Commission granted a joint petition by Orlando Utilities Commission (OUC), Kissimmee Utility Authority (KUA), Florida Municipal Power Authority (FMPA), and Southern-Florida to construct a 633 MW gas-fired combined cycle unit at the existing Stanton site in Orange County. This unit was certified under the Power Plant Siting Act in September 2001. Construction began immediately thereafter to meet an anticipated October 2003 in-service date.

5.4.2 Merchant Plants

- **Duke Energy Company / Utilities Commission of New Smyrna Beach**

  On March 22, 1999, the Commission granted a need petition by Duke New Smyrna Beach Energy Company to build a 514 MW gas-fired combined cycle unit at a site in New Smyrna Beach. Approximately 50 MW of the proposed plant's output is expected to go to the Utilities Commission of New Smyrna Beach (NSB) pursuant to a yet-unsigned power purchase agreement, with the remainder of the capacity available for purchase by any other entity.

The proposed Duke Energy unit has been awaiting certification by DEP under the Power Plant Siting Act. However, the Florida Supreme Court overturned the Commission's approval. The Court stated that the Commission does not have jurisdiction to approve the need for generating units whose capacity is not fully committed to retail load. The Commission petitioned the Supreme Court for a rehearing on its decision. On September 28, 2000, the Supreme Court reaffirmed its order overturning the Commission's Duke Energy decision. This certification is presently being held in abeyance.

- **Calpine – Ospry Auburndale Unit**

  On June 27, 2001 the application for certification submitted in March 2000 for a 540 MW combined-cycle, natural gas unit was approved by the Commission.

- **Calpine – Ospry Blue Heron Unit**

  On November 27, 2000 an application for certification of a 1080 MW combined-cycle, natural gas unit was submitted. This application is presently on hold.

5.4.3 Planned Utility-Owned Generating Units Requiring Certification

The TYSPs filed by the reporting utilities contain proposed generating units that will require certification under the Power Plant Siting Act prior to their construction. The following is a summary of these proposed units.

- **Florida Power – Hines Units 2, 3, 4, and 5**

  FPC's expansion plans reflect the planned addition of four new 567 MW gas-fired combined cycle units at the existing Hines plant site in Polk County. Identical to the first unit at the site, Hines Units 2-5 are currently scheduled to be placed into commercial service in 2003, 2005, 2007, and 2009, respectively. FPC has petitioned the Commission for a Determination-of-Need for Hines Unit 2. All four of the proposed Hines units will require certification under the Power Plant Siting Act.

- **Florida Power & Light Company – Martin Units 5 and 6** (plus three unsited combined cycle units)

- **Jacksonville Electric Authority (JEA) – Brandy Branch Unit 4** (plus an unsited combined cycle unit)

  JEA's expansion plans reflect the addition of a 191 MW heat recovery steam generator (HRSG) at the proposed Brandy Branch site in Duval County. The HRSG, with an anticipated June 2003 in-service date, will be fitted to two 191 MW combustion turbine units already placed into service in January 2001, forming a

573 MW combined cycle unit. JEA plans to file a Determination-of-Need petition for the HRSG with the Commission later this year. The HRSG will require certification under the Power Plant Siting Act.

JEA also plans to build a new 284 MW gas-fired combined cycle unit at a yet-to-be determined site. The proposed unit, with a June 2006 in-service date, will require certification under the Power Plant Siting Act.

- **City of Lakeland (LAK) – McIntosh Unit 4**

LAK's expansion plans reflect the planned addition of a 288 MW pressurized fluidized bed coal unit at the existing McIntosh plant site in Polk County. This unit was formerly a candidate for funding from the U.S. DOE's Clean Coal Technology Program, but it appears that LAK may proceed with a different choice of technology. LAK needs to file a Determination-of-Need petition with the Commission soon if it hopes to meet an anticipated June 2005 in-service date. This unit will require certification under the Power Plant Siting Act

- **Florida Power & Light Company – Manatee Unit 8**

FPL's expansion plans reflect the planned addition of a new 1100 MW natural gas-fired unit at the Manatee Plant in Manatee County. This unit will require certification under the Power Plant Siting Act and the application was submitted February 2002 and is under review.

6. FRCC Demand, Energy, and Fuel Price Projections

This section describes FRCC's assessment about the region's projected load over the next 10 years. This projection is the current planning reported by FRCC. These FRCC data are assessed, and used as the basis for the region's GEMSET forecast. This section provides the GEMSET Team's forecast of fuel price expected for the region, and covers the following subjects:

- Section 6.1 gives FRCC demand and energy growth projections for the region, beginning on page 6-1.
- Section 6.2, beginning on page 6-5, documents the GEMSET Team's assessment of FRCC's historical and forecast fuel prices for generation.

6.1 Demand and Energy Growth Projection

The long-term forecast is for an FRCC energy system with summer peaks growing at 2.54%, and winter peaks at 2.35% annually. Total energy consumption is expected to grow at slightly more than 2.4% annually

Exhibit 6-1 shows FRCC's summer and winter peak load forecasts from 2002 through 2011, while Exhibit 6-2 indicates the net energy for sale forecast through 2011.

Exhibit 6-1
FRCC Summer and Winter Peak Demand Forecast

YEAR	SUMMER PEAK (MW)	YEAR	WINTER PEAK (MW)
2002	39,547	2002-2003	41,673
2003	40,758	2003-2004	42,705
2004	41,741	2004-2005	43,724
2005	42,753	2005-2006	44,736
2006	43,787	2006-2007	45,711
2007	44,709	2007-2008	46,726
2008	45,657	2008-2009	47,821
2009	46,677	2009-2010	48,873
2010	47,758	2010-2011	50,017
2011	48,869	2011-2012	51,158

*Net Firm Peak Demand

Over the next ten years, peak demands are expected to increase approximately 1,000 MW per year, reaching a level of over 50,000 MW by the end of the period. This represents a growth of slightly more than 23% over the time frame of the forecast.

Exhibit 6-2 provides the forecasted energy for load along with the sources of that generation by fuel type. The growth in energy is over 26%.

Exhibit 6-2
Forecasted Energy Interchange and Generation by Fuel Type

YEAR	NET ENERGY FOR LOAD	INTER-CHANGE*	NUCLEAR	COAL	OIL	NATURAL GAS	HYDRO	NUG**
2001 ***	210,978	18,880	31,568	73,005	34,858	39,032	22	13,613
2002	217,759	13,984	32,102	77,194	17,963	63,368	15	13,133
2003	224,715	11,087	31,207	79,973	20,488	69,392	15	12,553
2004	231,404	11,409	31,626	76,252	22,702	76,910	15	12,490
2005	238,178	11,986	31,572	75,261	18,274	88,648	15	12,422
2006	245,259	13,393	31,660	75,094	16,602	97,194	15	11,301
2007	251,171	14,130	30,773	75,732	16190	103,155	15	11,176
2008	257,189	13,939	32,179	77,675	15,623	106,691	15	11,067
2009	262,950	13,011	30,464	77,567	13,888	118,020	15	9,984
2010	268,963	7,493	31,560	78,036	14,519	128,249	15	9,091
2011	274,634	5,750	31,570	79,557	14,187	135,218	15	8,337

*Interchange includes other.
**Non-utility generators.
***Figures are actual.

SOURCE: Regional Load and Resource Plan - State Supplement, FRCC

6.1.1 Baseload Demand Projections

With the projections provided by FRCC from their planning departments, it is apparent that little diversity is expected in their load characteristics between now and 2010. Annual and monthly load factors remained relatively constant over the time period of their analysis. Therefore, based on the projections provided, baseload requirements will increase by only approximately 6,000 MW through year 2010. It is expected that this baseload generation will increase by the more than 13,000 MW currently in the FRCC planning process.

6.1.2 Peaking Demand Projections

With the peak load increasing almost 10,000 MW in the next 10 years, FRCC's actual peak load generation requirements will likely increase by about 3,000 MW to almost 10,000 MW from today's 7,000 MW level. FRCC expects combustion turbines fueled by natural gas will supply all of that new generation requirement. This dependency of the state's load growth on natural gas-fueled capacity is reflected in the following projections through the year 2010, as shown in Exhibit 6-3:

Exhibit 6-3
Interchange and Generation by Fuel Type
(% of gigawatt-hours) – 2000 – 2010

YEAR	NET ENERGY FOR LOAD	INTER-CHANGE*	NUCLEAR	COAL	OIL	NATURAL GAS	HYDRO	NUG**
2001 *	100.0%	8.9%	15.0%	34.6%	16.5%	18.5%	0.0%	6.5%
2002	100.0%	6.4%	14.7%	35.4%	8.2%	29.1%	0.0%	6.0%
2003	100.0%	4.9%	13.9%	35.6%	9.1%	30.9%	0.0%	5.6%
2004	100.0%	4.9%	13.7%	33.0%	9.8%	33.2%	0.0%	5.4%
2005	100.0%	5.0%	13.3%	31.6%	7.7%	37.2%	0.0%	5.2%
2006	100.0%	5.5%	12.9%	30.6%	6.8%	39.6%	0.0%	4.6%
2007	100.0%	5.6%	12.3%	30.2%	ERR	41.1%	0.0%	4.4%
2008	100.0%	5.4%	12.5%	30.2%	6.1%	41.5%	0.0%	4.3%
2009	100.0%	4.9%	11.6%	29.5%	5.3%	44.9%	0.0%	3.8%
2010	100.0%	2.8%	11.7%	29.0%	5.4%	47.7%	0.0%	3.4%
2011	100.0%	2.1%	11.5%	29.0%	5.2%	49.2%	0.0%	3.0%

*Figures are actual.
**Other includes cogeneration and small power producers.

SOURCE: Regional Load and Resource Plan - State Supplement, FRCC

The development of this dependence on natural gas is a continuation of an established trend evident in Exhibit 6-4, which portrays the history of the shift in fuels over the years 1986 through 2000.

Exhibit 6-4
Net Energy for Load by Fuel Type and Other Sources (1986 – 2000)

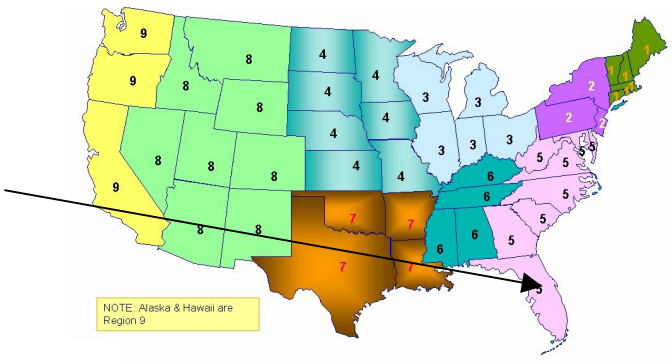
YEAR	COAL GWH	COAL PERCENT	OIL GWH	OIL PERCENT	NATURAL GAS GWH	NATURAL GAS PERCENT	NUCLEAR GWH	NUCLEAR PERCENT	HYDRO GWH	HYDRO PERCENT	SUBTOTAL	OTHER SOURCES NUG	OTHER SOURCES OTHER**	TOTAL
1987	53,390	49.2	19,886	18.3	16,238	15.0	19,049	17.5	32	0.0	108,595			
1988	56,614	45.6	26,448	21.3	14,592	11.8	26,198	21.1	210	0.2	124,062			
1989	63,744	50.1	26,150	20.6	17,417	13.7	19,814	15.6	17	0.2	127,142			
1990	62,110	49.5	26,617	21.2	15,920	12.7	20,572	16.4	249	0.2	125,468			
1991	66,037	49.1	31,844	23.7	17,472	13.0	19,062	14.2	28	0.0	134,443			
1992	58,836	42.0	38,733	27.7	17,744	12.7	24,693	17.6	54	0.0	140,060			
1993	61,000	40.8	44,870	30.0	18,064	12.1	25,403	17.0	51	0.0	149,388			
1994	62,511	40.9	43,553	28.5	20,420	13.4	26,216	17.2	80	0.1	152,779			
1995	65,714	41.3	32,185	20.2	33,483	21.0	27,726	17.4	47	0.0	159,156			
1996	70,008	44.3	33,060	20.9	30,496	19.3	24,333	15.4	49	0.0	157,946			
1997	74,219	45.8	32,561	20.1	33,123	20.5	22,000	13.6	58	0.0	161,961			
1998	73,184	40.4	46,430	25.6	31,319	17.3	30,168	16.7	46	0.0	181,147			
1999	78,413	43.9	33,550	18.8	34,964	19.6	31,772	17.8	74	0.0	178,773	12,820	8,781	200,374
2000***	76,050	42.7	32,763	18.4	36,878	20.7	32,555	18.3	7	0.0	178,253	12,461	18,372	209,086
2001	73,005	40.9	34,858	19.5	39,032	21.9	31,568	17.7	22	0.0	178,485	13,613	18,880	210,978

*Percentages are calculated for fuel sources only.
**Other includes inter-region interchange.
***2000 numbers revised slightly. 2000 numbers throughout the report are as originally released unless otherwise noted.

SOURCES: 1985-1999, EIA Form 759
1985-1999, FPSC Form AFAD (RRR)-2
1985-1999, A-Schedules
1999-2001, Regional Load and Resource Plan - State Supplement, FRCC

6.2 GEMSET Team's Fuels Forecast for the FRCC Region

Region 1 – New England
Region 2 – Mid-Atlantic
Region 3 – East North Central
Region 4 – West North Central
Region 5 – South Atlantic
Region 6 – East South Central
Region 7 – West South Central
Region 8 – Mountain
Region 9 - Pacific



This section discusses the fuel prices that existed in the region and describes the GEMSET forecast expectations for the region. The fuels forecast region is made up of the following states as reported by FERC: Region 5 – South Atlantic – Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia. These forecasts are drawn from the GEMSET Fuels Characterization.

6.2.1 Expected Natural Gas Prices

The delivered natural gas price to generating company owners in the region are reported on FERC Form 423. Recent gas price historical and projected data for the region are shown in Exhibit 6-5, showing a comparison to the data from the sources, and Exhibit 6-6, with the source data removed. These data are reported on a monthly basis with a 6-month lag.

Periodically, these data will be revised to reflect changes in actual prices, and to adjust the forecasts to NYMEX gas futures market changes, and changes in the NEMS economic modeling.

Exhibit 6-5
GEMSET Baseline Natural Gas Price Projection for the South Atlantic Region in Current Year U.S. Dollars Compared to the Data Sources Used for the Projections

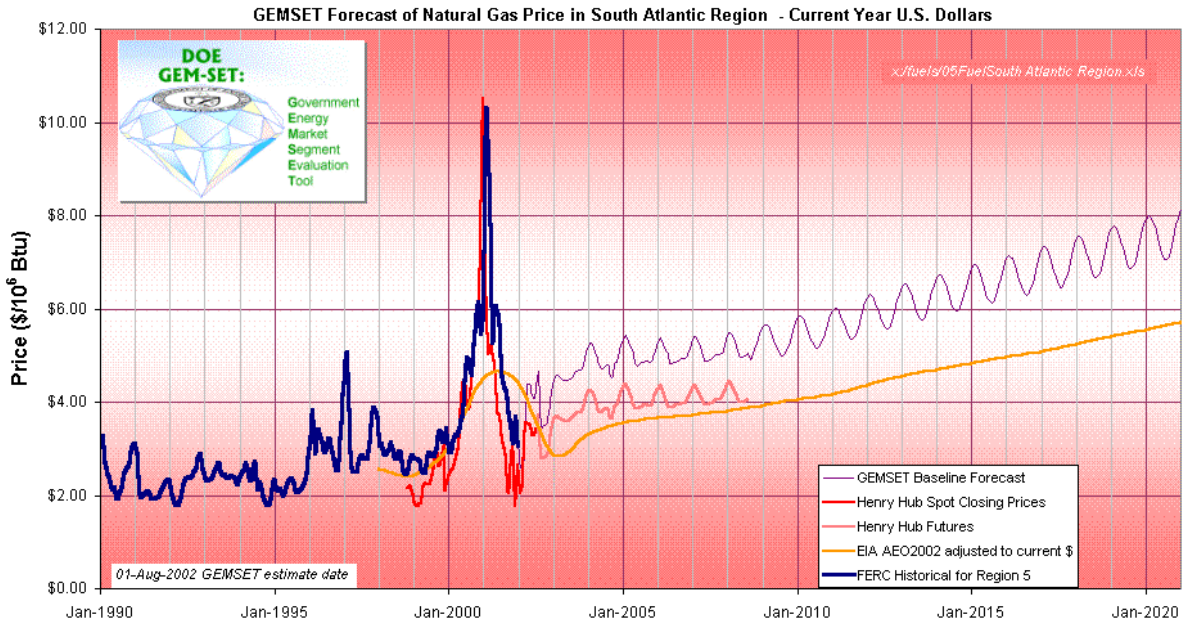
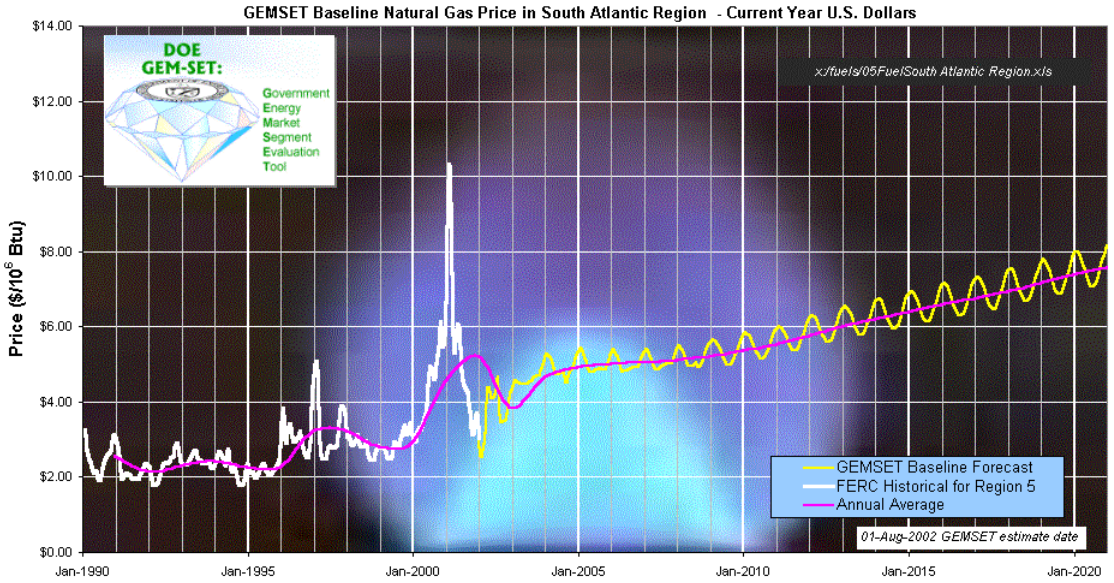


Exhibit 6-6
GEMSET Baseline Natural Gas Price Projection for the South Atlantic Region



6.2.2 Natural Gas Availability

Florida is planning a considerable increase in natural-gas-fueled generating capacity (see Section 2.6). In order to accommodate all this new need for natural gas, as well as increase in gas use for other purposes, the pipeline delivery capability and gas discovery/development of the gas wells feeding the pipelines must keep pace. This report focuses on electricity supply and prices for the state; a reader interested in the gas delivery infrastructure development plans in Florida should review EIA and other assessments of the adequacy of gas supply in the state.

Florida's electric utilities continue to rely primarily on a single gas transportation pipeline company, Florida Gas Transmission (FGT), to supply natural gas. FGT's system pipeline capacity, which is fully subscribed at this time, is nearly 1.5 billion (x 10^9) cubic feet per day (Bcf/day).

Nearly 81% of the existing pipeline capacity is used for utility and non-utility electric generation. This trend is expected to continue, as electric utilities project a 143% increase in natural gas usage over the next 10 years. Much of this increase (46%) is forecasted to occur between 2002 and 2004.

Conservative estimates indicate that future natural gas requirements will exceed FGT's current capacity. To meet forecasted requirements, an additional 1.0 Bcf/day may be needed over the next 10 years. FGT has asserted to the FRCC that it is able and willing to expand its natural gas pipeline system to meet all forecasted electric demand. However, the Commission believes that electric utilities should identify a contingency plan in case gas transportation capacity is not available when needed for future electric generation expansion.

On February 28, 2000, the FERC approved FGT's proposed Phase IV Expansion project. The project, consisting of compression upgrade and approximately 140 miles of new natural gas pipeline, will increase the average daily natural gas delivery capacity to a total of 1.727 Bcf/day. FGT began construction in April 2001 to meet a projected in-service date of May 2003.

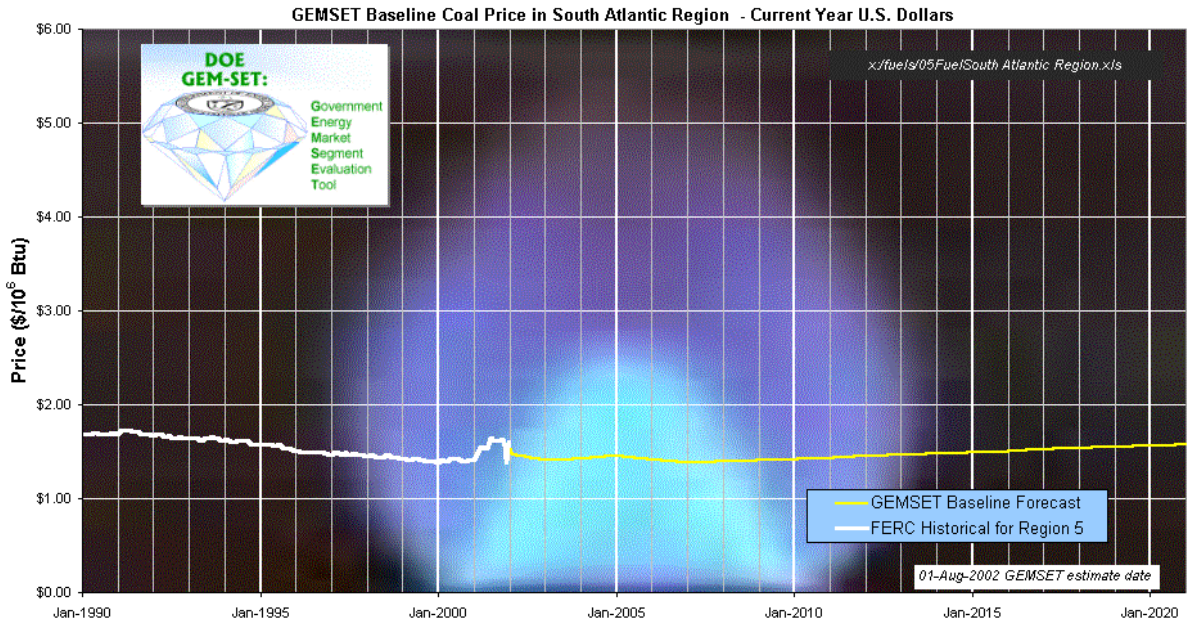
While FGT's Phase IV project was undergoing FERC review, FGT held a five-week open season for a proposed Phase V expansion. The open season, which closed on April 30, 1999, garnered enough interest that FGT submitted a certificate application to FERC on December 1, 1999 for a compression upgrade and approximately 190 miles of new pipeline. This Phase V project was approved by FERC in 2000. Upon completion in 2003 of the Phase IV project, the Phase V expansion will be started and is expected to raise FGT's capacity to nearly 2.0 Bcf/day. This capacity is expected to be sufficient to meet anticipated demand for year 2003 but is not sufficient for the forecasted need of 2.41 Bcf/day in the year 2009.

On October 15, 1999, Gulfstream Natural Gas System, L.L.C. (Gulfstream) applied for FERC approval to construct and operate a new 744-mile interstate natural gas pipeline. The proposed 1.13 Bcf/day pipeline will extend from near Mobile, Alabama, across the Gulf of Mexico, to near Port Manatee, Florida and across the state to Fort Pierce on the east coast. All FERC approvals were obtained; Gulfstream Natural Gas System completed the new natural gas pipeline in April 2002.

6.2.3 Expected Coal Price in South-Atlantic Region

The historical coal price in the South Atlantic Region has been stable over the last few years, averaging between $1.35 and $1.45/10^6 Btu. This price is expected to continue for the short term, but rise slightly in the long-term. Exhibit 6-7 shows the historical and projected prices for coal.

Exhibit 6-7
GEMSET Baseline Coal Price Projection for the South Atlantic Region



6.2.4 Expected Oil Prices in the South Atlantic Region

Exhibit 6-8 and Exhibit 6-9 indicate the historical and projected prices for No. 2 and No. 6 fuel oil in the region. As with all of the regions, there are individual ratios developed by the GEMSET Team for each fuel based on the historical relationship on a national basis versus the regional prices.

Exhibit 6-8 GEMSET No. 2 Oil Price in the South Atlantic Region

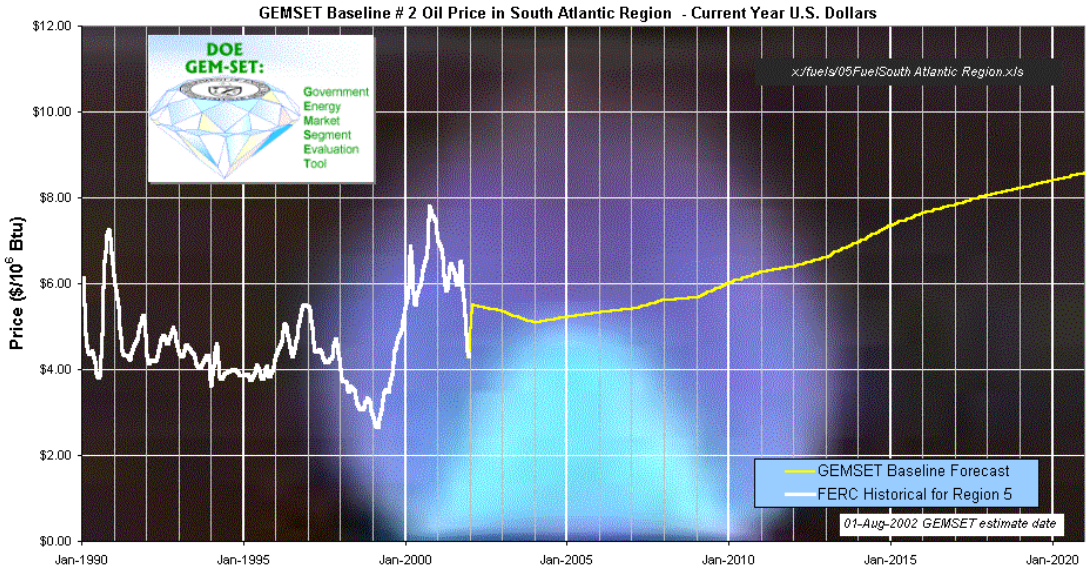
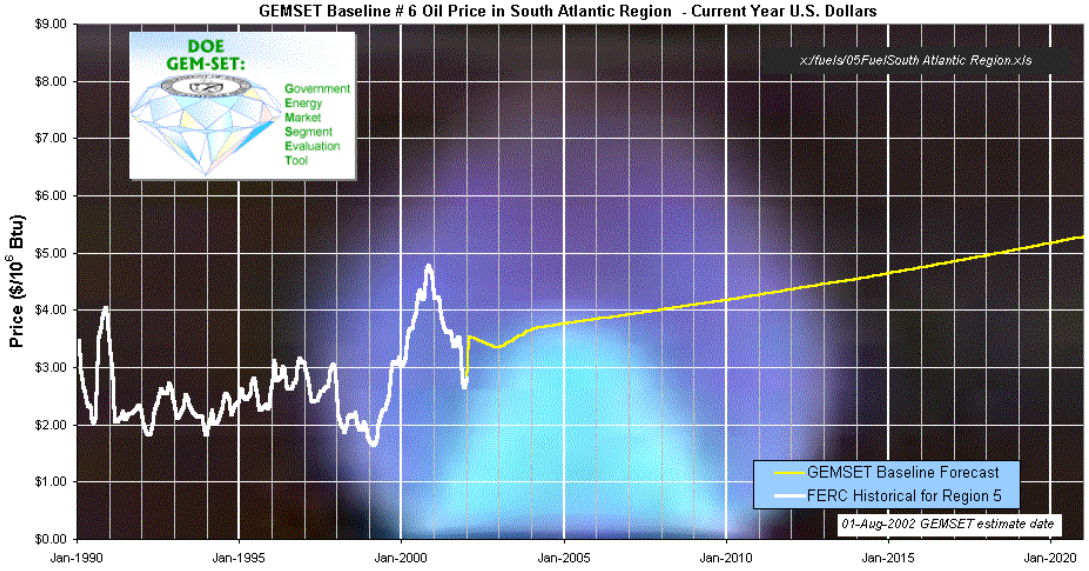


Exhibit 6-9 GEMSET No. 6 Oil in the South Atlantic Region



7. References

7.1 Bibliography

References used to prepare this report include the following:

Florida Reliability Coordinating Council, Annual Compliance Report.

Florida Public Service Commission 2000 Annual Report, edited by Division of Consumer Affairs.

2001 Summer Assessment, Reliability of the Bulk Electricity Supply in North America, North America Electric Reliability Council.

Florida Public Service Commission, Comparative Rate Statistics, Sector A, Regulated Electric Utilities.

Monitoring Process for FRCC Agents, prepared by Florida Reliability Coordination Council, January 2002.

Federal Energy Regulatory Commission 2001 Annual Report.

Regional Transmission Organizations – Policy Analysis briefing paper: "The Viability of an RTO in Florida," prepared by the Division of Policy Analysis & Intergovernmental Liaison of the Florida Public Service Commission, September 2000.

Review of Electric Utility 2000 Ten-Year Plans, published by the Florida Public Service Commission, December 2000.

Southeastern Infrastructure Assessment prepared by The Southeastern Association of Regulatory Commissioners May 8, 2002.

Final Report of the Florida Energy 2020 Study Commission, "A Strategy for Florida's Energy Future," published by the Florida Energy 2020 Study Commission, December 2001.

7.2 Numbered References

The numbered references used to prepare this report include the following:

[1] Statistics of the Florida Electric Utility Industry 2000, published by the Division of Economic Regulators of the Florida Public Service Commission.

[2] Florida Public Service Commission, Statement of Agency Organizations & Operations.

[3] Review of Electric Utility 2000 Ten-Year Site Plans, Florida Public Service Commission.

[4] Weinstein, R.E., Herman, A.A., and Bartone, L.M. GEMSET Assessment: 2002 Fuels Characterization. Parsons Report No. EJ-2002-04. September 2002.

Appendix – FRCC Unit Data

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Florida Power & Light Co	CSL Gas Recovery	GT	LF	3000	3
Florida Power & Light Co	CSL Gas Recovery	GT	LF	3000	6
Florida Power & Light Co	CSL Gas Recovery	GT	LF	3000	9
Florida Power & Light Co	CSL Gas Recovery	GT	LF	3000	12
Florida Power & Light Co	Volusia County Landfill	IC	LF	1900	14
Florida Power & Light Co	Volusia County Landfill	IC	LF	1900	16
Tampa Electric Co	City of Tampa Howard F Curren AWT Plant	IC	DG	500	16
Tampa Electric Co	City of Tampa Howard F Curren AWT Plant	IC	DG	500	17
Tampa Electric Co	City of Tampa Howard F Curren AWT Plant	IC	DG	500	17
Tampa Electric Co	City of Tampa Howard F Curren AWT Plant	IC	DG	500	18
Tampa Electric Co	City of Tampa Howard F Curren AWT Plant	IC	DG	500	18
Florida Power & Light Co	Central District Wastewater Treatment Plant	IC	SM	1250	20
Florida Power & Light Co	Central District Wastewater Treatment Plant	IC	SM	1250	21
Florida Power & Light Co	Central District Wastewater Treatment Plant	IC	SM	1250	22
Florida Power & Light Co	Central District Wastewater Treatment Plant	IC	SM	1250	23
Florida Power & Light Co	Lauderdale	CW	WH	151250	498
Florida Power & Light Co	Lauderdale	CW	WH	151250	973
Florida Power & Light Co	Lee County Solid Waste Energy Recovery Facility	ST	MW	39000	1012
Florida Power & Light Co	Martin	CW	WH	204000	1512
Florida Power & Light Co	Martin	CW	WH	204000	2012
Florida Power & Light Co	Miami Dade County Resources Recovery Facility	ST	MW	38500	2051
Florida Power & Light Co	Miami Dade County Resources Recovery Facility	ST	MW	38500	2089
Florida Power & Light Co	North County Regional Resource Recovery Facility	ST	MW	61000	2150
Florida Power & Light Co	Palatka Operations	ST	BL	7500	2158
Florida Power & Light Co	Palatka Operations	ST	BL	27000	2185
Florida Power & Light Co	Palatka Operations	ST	BL	48000	2233
Florida Power & Light Co	Palatka Operations	ST	BL	5000	2238
	Putnam	CA	WH	120000	2535
Florida Power & Light Co	Putnam	CA	WH	120000	2832
Florida Power & Light Co	South District Wastewater Treatment Plant	IC	SM	900	2833
Florida Power & Light Co	South District Wastewater Treatment Plant	IC	SM	900	2834
Florida Power & Light Co	South District Wastewater Treatment Plant	IC	SM	900	2834
Florida Power & Light Co	South Florida Cogeneration Associates	ST	WH	8000	2842

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Florida Power & Light Co	Wheelabrator North Broward	ST	MW	67609	2910
Florida Power & Light Co	Wheelabrator South Broward	ST	MW	66086	2976
Florida Power Corp	Buckeye Florida LP	ST	BL	8160	2984
Florida Power Corp	Buckeye Florida LP	ST	BL	14800	2999
Florida Power Corp	Buckeye Florida LP	ST	BL	10400	3010
Florida Power Corp	Buckeye Florida LP	ST	BL	11000	3021
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	7500	3028
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	7500	3036
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	7500	3043
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	12500	3056
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	10500	3066
Florida Power Corp	Florida Coast Paper Co LLC	ST	WH	21250	3087
Florida Power Corp	Lake County Resource Recovery Facility	ST	MW	15582	3103
Florida Power Corp	Pasco County Solid Waste Resource Recovery	ST	MW	31200	3134
Florida Power Corp	Pinellas County Resource Recovery	ST	MW	50580	3185
Florida Power Corp	Pinellas County Resource Recovery	ST	MW	26038	3211
Florida Power Corp	Suwannee River Chem Complex	ST	SU	27310	3238
Florida Power Corp	Swift Creek Chemical Complex	ST	SU	21011	3259
Florida Power Corp	Tiger Bay	CW	WH	66150	3326
Florida Power Corp	U S Agri Chemicals Corp Fort Meade Chemical Prod	ST	SU	32000	3358
Florida Public Utilities Co	Jefferson Smurfit Corp	ST	BL	74400	3432
Florida Public Utilities Co	Jefferson Smurfit Corp	ST	BL	44000	3476
Florida Public Utilities Co	Jefferson Smurfit Corp	ST	BL	9375	3486
Fort Pierce Utilities Auth	Henry D King	CW	WH	8375	3494
Gulf Power Co	Bay Resource Management Center	ST	MW	13600	3508
Gulf Power Co	Stone Container Corp Panama City Mill	ST	BL	10000	3518
Gulf Power Co	Stone Container Corp Panama City Mill	ST	BL	20000	3538
Gulf Power Co	Stone Container Corp Panama City Mill	ST	BL	4000	3542
JEA	Jefferson Smurfit Corp Jacksonville	ST	BL	43500	3585
Key West City of	Southernmost Waste To Energy Facility	ST	MW	3500	3589
Kissimmee Utility Authority	Cane Island	CW	WH	40000	3629
Kissimmee Utility Authority	Hansel	CW	WH	10000	3639
Kissimmee Utility Authority	Hansel	CW	WH	10000	3649
Lake Worth City of	Tom G Smith	CW	WH	10000	3658
Lakeland City of	Larsen Memorial	CW	WH	25000	3689
Tampa Electric Co	Cargill Fertilizer Inc	ST	SU	42500	3731
Tampa Electric Co	Cargill Fertilizer Inc	ST	SU	35402	3767
Tampa Electric Co	Cargill Fertilizer Inc	ST	SU	6000	3773
Tampa Electric Co	Cargill Fertilizer Inc Bartow	ST	SU	45050	3818
Tampa Electric Co	Cargill Fertilizer Inc Bartow	ST	SU	36915	3855
Tampa Electric Co	CFI Plant City Phosphate Complex	ST	SU	40545	3895
Tampa Electric Co	Farmland Hydro LP	ST	SU	38200	3933

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Tampa Electric Co	Hillsborough County Resource Recovery Facility	ST	MW	29020	3962
Tampa Electric Co	McKay Bay Facility	ST	MW	22170	3985
Tampa Electric Co	Mulberry Phosphates Inc	ST	SU	21000	4006
Tampa Electric Co	Pasco Beverage Co	ST	WH	1500	4007
Tampa Electric Co	Phillips	CW	WH	3600	4007
Vero Beach City of	Vero Beach Municipal	CW	WH	16500	4020
Tallahassee City of	Jackson Bluff	HY	WAT	4000	4024
Tallahassee City of	Jackson Bluff	HY	WAT	3000	4027
Tallahassee City of	Jackson Bluff	HY	WAT	4000	4031
USCE-Mobile District	J Woodruff	HY	WAT	10000	4043
USCE-Mobile District	J Woodruff	HY	WAT	10000	4055
USCE-Mobile District	J Woodruff	HY	WAT	10000	4067
Florida Power & Light Co	Okeelanta Power LP	ST	AB	74900	4142
Florida Power & Light Co	Osceola Power LP	ST	WW	65000	4207
Lakeland City of	Ridge Generating Station	ST	WW	47193	4254
Florida Power & Light Co	Clewiston Sugar House	ST	AB	21600	4276
Florida Power & Light Co	Bryant Sugar House	ST	AB	20000	4296
Florida Public Utilities Co	Rayonier Fernandina Mill	ST	WW	20000	4316
Florida Power Corp	Timber Energy Resources Inc	ST	WW	14010	4330
Florida Power Corp	Jefferson Power LC	ST	WW	7500	4337
Florida Power Corp	Perpetual Energy Corp	ST	WW	7500	4345
Florida Public Utilities Co	Rayonier Fernandina Mill	ST	WW	6500	4351
Florida Power & Light Co	Clewiston Sugar House	ST	AB	6000	4357
Florida Power & Light Co	Clewiston Sugar House	ST	AB	5000	4362
Florida Public Utilities Co	Rayonier Fernandina Mill	ST	WW	5000	4367
Florida Power & Light Co	Bryant Sugar House	ST	AB	3500	4371
Florida Power & Light Co	Clewiston Sugar House	ST	AB	3500	4374
Florida Power & Light Co	Clewiston Sugar House	ST	AB	3125	4377
Florida Power & Light Co	Bryant Sugar House	IC	AB	1000	4378
Florida Power & Light Co	Bryant Sugar House	IC	AB	1000	4379
Florida Power & Light Co	Clewiston Sugar House	IC	AB	1000	4380
Florida Power & Light Co	Clewiston Sugar House	IC	AB	1000	4381
JEA	Girvin Landfill	IC	REF	3000	4384
Florida Power & Light Co	Bryant Sugar House	ST	AB	2500	4387
Florida Power & Light Co	Bryant Sugar House	ST	AB	2500	4389
JEA	St Johns River Power	ST	BIT	679000	5013
JEA	St Johns River Power	ST	BIT	679000	5651
Florida Power Corp	Crystal River	ST	BIT	739260	6383
Florida Power Corp	Crystal River	ST	BIT	523800	6862
Florida Power Corp	Crystal River	ST	BIT	739260	7584
Tampa Electric Co	Big Bend	ST	BIT	445500	8010
Tampa Electric Co	Big Bend	ST	BIT	486000	8457
Tampa Electric Co	Big Bend	ST	BIT	445500	8883
Florida Power Corp	Crystal River	NP	UR	890460	9735

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Tampa Electric Co	F J Gannon	ST	BIT	239360	9977
Tampa Electric Co	Big Bend	ST	BIT	445500	10420
Florida Power & Light Co	St Lucie	NP	UR	850000	11273
Florida Power & Light Co	Turkey Point	NP	UR	760000	11990
Florida Power & Light Co	Turkey Point	NP	UR	760000	12707
Florida Power & Light Co	St Lucie	NP	UR	850000	13560
Florida Power Corp	Crystal River	ST	BIT	440550	13943
Orlando Utilities Comm	Stanton Energy Ctr	ST	BIT	464580	14389
Orlando Utilities Comm	Stanton Energy Ctr	ST	BIT	464580	14832
Tampa Electric Co	F J Gannon	ST	BIT	445500	15224
Lakeland City of	C D McIntosh Jr	ST	BIT	363870	15565
Florida Power & Light Co	Indiantown Cogeneration Facility	ST	COL	330000	15895
JEA	Cedar Bay Generating Co LP	SF	COL	285000	16180
Tampa Electric Co	Polk	IG	BIT	326229	16430
Seminole Electric Coop Inc	Seminole	ST	BIT	714600	17095
Seminole Electric Coop Inc	Seminole	ST	BIT	714600	17760
Gulf Power Co	Crist	ST	BIT	578000	18237
Tampa Electric Co	F J Gannon	ST	BIT	187500	18406
Gainesville Regional Utilities	Deerhaven	ST	BIT	250750	18635
Gulf Power Co	Lansing Smith	ST	BIT	149600	18797
Tampa Electric Co	F J Gannon	ST	BIT	179520	18952
Gulf Power Co	Crist	ST	BIT	93750	19030
Gulf Power Co	Lansing Smith	ST	BIT	190400	19220
Florida Power & Light Co	Central Power&Lime Inc	ST	COL	125000	19345
Gulf Power Co	Crist	ST	BIT	369750	19647
Tampa Electric Co	F J Gannon	ST	BIT	125000	19761
Gulf Power Co	Crist	ST	BIT	93750	19841
Tampa Electric Co	F J Gannon	ST	BIT	125000	19939
Gulf Power Co	Scholz	ST	BIT	49000	19985
Gulf Power Co	Scholz	ST	BIT	49000	20031
Gulf Power Co	Pensacola Florida	ST	COL	43200	20074
Gulf Power Co	Pensacola Florida	ST	COL	39600	20114
Florida Power Corp	Hines Energy Complex	CC	NG	505000	20619
Florida Power & Light Co	Martin	CT	NG	204000	20823
Florida Power & Light Co	Martin	CT	NG	204000	21027
Florida Power & Light Co	Martin	CT	NG	204000	21231
Florida Power & Light Co	Martin	CT	NG	204000	21435
Florida Power & Light Co	Lauderdale	CT	NG	185000	21620
Florida Power & Light Co	Lauderdale	CT	NG	185000	21805
Florida Power & Light Co	Lauderdale	CT	NG	185000	21990
Florida Power & Light Co	Lauderdale	CT	NG	185000	22175
Florida Power Corp	Tiger Bay	CT	NG	166850	22344
Tampa Electric Co	Auburndale Power Partners LP	GT	GAS	135000	22479
Florida Power Corp	Orlando CoGen LP	GT	GAS	122400	22601

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Kissimmee Utility Authority	Cane Island	CT	NG	80000	22681
Florida Power Corp	Mulberry Cogeneration Facility	GT	GAS	103500	22784
Tampa Electric Co	Phillips	IC	FO6	19215	22801
Tampa Electric Co	Phillips	IC	FO6	19215	22818
Reedy Creek Improvement Dist	Central Energy Plant	CT	NG	35000	22847
Reedy Creek Improvement Dist	Central Energy Plant	CA	NG	8500	22856
Florida Power & Light Co	Cape Canaveral	ST	FO6	402050	23262
JEA	Northside Generating	ST	FO6	563700	23767
Florida Power & Light Co	Turkey Point	ST	FO6	402050	24178
Florida Power & Light Co	Turkey Point	ST	FO6	402050	24581
Florida Power & Light Co	Cape Canaveral	ST	FO6	402050	24985
Florida Power & Light Co	Port Everglades	ST	FO6	402050	25397
JEA	Northside Generating	ST	FO6	297500	25659
Vero Beach City of	Vero Beach Municipal	CT	NG	41400	25699
Lakeland City of	Larsen Memorial	CT	NG	101520	25792
Florida Power & Light Co	Port Everglades	ST	FO6	402050	26184
Florida Power & Light Co	Sanford	ST	FO6	436100	26578
Lake Worth City of	Tom G Smith	CT	NG	21410	26601
Florida Power & Light Co	Fort Myers	ST	FO6	402050	27003
Florida Power & Light Co	Sanford	ST	FO6	436100	27397
JEA	Southside Generating	ST	FO6	156600	27539
Florida Power & Light Co	Riviera	ST	FO6	310420	27822
JEA	J D Kennedy	ST	FO6	149600	27919
Florida Power & Light Co	Riviera	ST	FO6	310420	28211
Florida Power & Light Co	Port Everglades	ST	FO6	225250	28433
Florida Power & Light Co	Port Everglades	ST	FO6	225250	28655
Florida Power Corp	Anclote	ST	FO6	556200	29177
Florida Power & Light Co	Sanford	ST	FO6	156250	29331
Florida Power & Light Co	Fort Myers	ST	FO6	156250	29473
Florida Power & Light Co	Manatee	ST	FO6	863300	30290
Orlando Utilities Comm	St Cloud	IC	NG	2000	30292
Florida Power Corp	P L Bartow	ST	FO6	127500	30409
Florida Power Corp	Anclote	ST	FO6	556200	30931
Florida Power & Light Co	Manatee	ST	FO6	863300	31753
Florida Power Corp	P L Bartow	ST	FO6	127500	31872
Florida Power & Light Co	Martin	ST	NG	863300	32705
Homestead City of	G W Ivey	IC	NG	6485	32711
Florida Power Corp	University of FL	GT	NG	43000	32752
Florida Power & Light Co	Martin	ST	NG	863300	33573
Gulf Power Co	Pensacola Florida Plant	GT	GAS	100000	33673
Orlando Utilities Comm	Reliant Energy Indian River Plant	ST	GAS	317043	33990
Homestead City of	G W Ivey	IC	NG	8800	33999
JEA	Southside Generating	ST	FO6	75000	34066
Kissimmee Utility Authority	Hansel	IC	NG	3000	34069

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Homestead City of	G W Ivey	IC	NG	8800	34078
Homestead City of	G W Ivey	IC	NG	6485	34085
Florida Power & Light Co	Putnam	CT	NG	85000	34170
Florida Power & Light Co	Putnam	CT	NG	85000	34255
Florida Power & Light Co	Putnam	CT	NG	85000	34340
Florida Power & Light Co	Putnam	CT	NG	85000	34425
Tampa Electric Co	Hookers Point	ST	FO6	81600	34492
Gainesville Regional Utilities	Deerhaven	GT	NG	96140	34573
Lakeland City of	C D McIntosh Jr	ST	NG	126000	34676
Florida Power Corp	Intercession City	GT	FO2	165000	34846
Orlando Utilities Comm	St Cloud	IC	NG	5850	34851
Orlando Utilities Comm	Reliant Energy Indian River Plant	ST	GAS	213000	35064
JEA	J D Kennedy	ST	FO6	50000	35107
Fort Pierce Utilities Auth	Henry D King	CT	NG	22520	35130
Kissimmee Utility Authority	Cane Island	GT	NG	42000	35165
Tampa Electric Co	Dinner Lake	ST	NG	12650	35176
Orlando Utilities Comm	St Cloud	IC	NG	6300	35182
Florida Power Corp	Orange Cogeneration Facility	GT	GAS	54000	35236
Florida Power Corp	Orange Cogeneration Facility	GT	GAS	54000	35290
Gainesville Regional Utilities	Deerhaven	ST	NG	75000	35374
Tallahassee City of	Arvah B Hopkins	ST	NG	259250	35622
Florida Power Corp	Lake Cogen Ltd	GT	GAS	48800	35671
Florida Power Corp	Lake Cogen Ltd	GT	GAS	48800	35720
Florida Power Corp	Lake Cogen Ltd	GT	GAS	48800	35769
Florida Power Corp	Pasco Cogen Ltd	GT	GAS	48800	35818
Florida Power Corp	Pasco Cogen Ltd	GT	GAS	48800	35866
Orlando Utilities Comm	Indian River Plant	GT	NG	41400	35914
Orlando Utilities Comm	Indian River Plant	GT	NG	41400	35962
Florida Power & Light Co	Tropicana Products Inc Bradenton Cogen	GT	GAS	45200	36008
Orlando Utilities Comm	St Cloud	IC	NG	3750	36011
Lakeland City of	C D McIntosh Jr	ST	NG	103500	36098
Florida Power & Light Co	Cutler	ST	NG	162000	36243
Orlando Utilities Comm	St Cloud	IC	NG	3750	36246
JEA	J D Kennedy	ST	FO6	50000	36289
Orlando Utilities Comm	St Cloud	IC	NG	6445	36295
Homestead City of	G W Ivey	IC	NG	2070	36297
Homestead City of	G W Ivey	IC	NG	2070	36299
Homestead City of	G W Ivey	IC	NG	2070	36301
Homestead City of	G W Ivey	IC	NG	2070	36303
Homestead City of	G W Ivey	IC	NG	2070	36305
Homestead City of	G W Ivey	IC	NG	2070	36307
Homestead City of	G W Ivey	IC	NG	2070	36309
Florida Power Corp	P L Bartow	ST	NG	239360	36522
Lakeland City of	Larsen Memorial	ST	NG	44000	36572

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Kissimmee Utility Authority	Hansel	IC	NG	2070	36574
Orlando Utilities Comm	Indian River Plant	GT	NG	130000	36701
Orlando Utilities Comm	Indian River Plant	GT	NG	130000	36828
Tallahassee City of	Arvah B Hopkins	ST	NG	75000	36908
Orlando Utilities Comm	Reliant Energy Indian River Plant	ST	GAS	78500	36987
Florida Power & Light Co	South Florida Cogeneration Associates	GT	GAS	19900	37007
Orlando Utilities Comm	St Cloud	IC	NG	2000	37009
Tampa Electric Co	Hookers Point	ST	FO6	34500	37041
Tampa Electric Co	Hookers Point	ST	FO6	34500	37073
Tampa Electric Co	IMC Agrico Co New Wales Operations	ST	GAS	58500	37131
JEA	Northside Generating	ST	FO6	297500	37393
Tampa Electric Co	Auburndale Power Partners LP	ST	GAS	57778	37450
Tampa Electric Co	Hookers Point	ST	FO6	33000	37482
Vero Beach City of	Vero Beach Municipal	ST	NG	55000	37538
Florida Power Corp	Mulberry Cogeneration Facility	ST	GAS	49500	37588
Homestead City of	G W Ivey	IC	NG	2500	37590
Homestead City of	G W Ivey	IC	NG	3270	37594
Homestead City of	G W Ivey	IC	NG	2500	37596
Homestead City of	G W Ivey	IC	NG	3270	37599
Homestead City of	G W Ivey	IC	NG	2500	37602
Florida Power Corp	Debary	GT	NG	115000	37695
Florida Power Corp	Debary	GT	NG	115000	37788
Florida Power Corp	Debary	GT	NG	115000	37881
Florida Power & Light Co	Cutler	ST	NG	74500	37953
Florida Power Corp	Suwannee River	ST	NG	75000	38034
Florida Power Corp	Intercession City	GT	NG	115000	38128
Tampa Electric Co	IMC Agrico Co South Pierce Operations	ST	GAS	38000	38166
Gainesville Regional Utilities	John R Kelly	ST	NG	50000	38215
Kissimmee Utility Authority	Hansel	IC	FO2	2500	38218
JEA	Anheuser Busch Inc Jacksonville Brewery	GT	GAS	8650	38227
Tampa Electric Co	Hookers Point	ST	FO6	49000	38268
Florida Power Corp	Intercession City	GT	NG	115000	38362
Florida Power Corp	Intercession City	GT	NG	115000	38456
Kissimmee Utility Authority	Hansel	IC	NG	2070	38458
Florida Power Corp	Intercession City	GT	NG	115000	38552
JEA	Seminole Mill	ST	GAS	30000	38582
Kissimmee Utility Authority	Hansel	IC	FO2	2500	38584
Florida Power Corp	Orange Cogeneration Facility	ST	GAS	28665	38613
Florida Power Corp	Lake Cogen Ltd	ST	GAS	26500	38639
Florida Power Corp	Pasco Cogen Ltd	ST	GAS	26500	38666
Florida Power Corp	Suwannee River	GT	NG	61200	38733
Vero Beach City of	Vero Beach Municipal	ST	NG	33000	38766
Florida Power Corp	Suwannee River	GT	NG	61200	38833
Gulf Power Co	Pea Ridge	GT	NG	4750	38838

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Gulf Power Co	Pea Ridge	GT	NG	4750	38843
Gulf Power Co	Pea Ridge	GT	NG	4750	38848
Fort Pierce Utilities Auth	Henry D King	ST	NG	56116	38898
Kissimmee Utility Authority	Hansel	IC	NG	2070	38900
Florida Power Corp	P L Bartow	GT	NG	55700	38960
Fort Pierce Utilities Auth	Henry D King	ST	NG	33000	38992
Florida Power Corp	P L Bartow	GT	NG	55700	39045
Florida Power Corp	Suwannee River	ST	NG	37500	39077
Florida Power Corp	Suwannee River	ST	NG	34500	39110
Vero Beach City of	Vero Beach Municipal	ST	NG	12500	39123
Florida Power Corp	Citrus World Inc	GT	GAS	3500	39127
JEA	Baptist Medical Center	GT	GAS	3500	39130
Tampa Electric Co	Cutrale Citrus Juices USA Inc	GT	GAS	3500	39134
Tampa Electric Co	Cutrale Citrus Juices USA Inc	GT	GAS	3500	39137
Tallahassee City of	S O Purdom	ST	NG	50000	39187
JEA	Baptist Medical Center	GT	GAS	3096	39190
Tampa Electric Co	IMC Agrico Co Nichols Operations	ST	GAS	13281	39204
JEA	Baptist Medical Center	GT	GAS	2650	39206
JEA	Baptist Medical Center	GT	GAS	2500	39209
New Smyrna Beach Utils Comm	W E Swoope	IC	FO2	910	39210
New Smyrna Beach Utils Comm	W E Swoope	IC	FO2	2275	39212
New Smyrna Beach Utils Comm	W E Swoope	IC	FO2	2050	39214
Kissimmee Utility Authority	Hansel	IC	NG	2070	39216
Fort Pierce Utilities Auth	Henry D King	ST	NG	16500	39232
Tampa Electric Co	IMC Agrico Co New Wales Operations	ST	GAS	10000	39242
Tallahassee City of	Arvah B Hopkins	GT	NG	27000	39268
Tampa Electric Co	St Josephs Hospital	GT	GAS	1700	39270
Lake Worth City of	Tom G Smith	ST	NG	32580	39303
Kissimmee Utility Authority	Hansel	CT	NG	35000	39335
Tampa Electric Co	IMC Agrico Co South Pierce Operations	ST	GAS	7500	39342
Gulf Power Co	Crist	ST	NG	37500	39377
Lakeland City of	Larsen Memorial	ST	NG	25000	39404
Tallahassee City of	Arvah B Hopkins	GT	NG	16320	39418
Tampa Electric Co	Nitram Inc	ST	GAS	6218	39425
Gulf Power Co	Pensacola Florida Plant	ST	GAS	6000	39431
Florida Power Corp	Higgins	GT	NG	42925	39466
Gulf Power Co	Pensacola Cogeneration Plant	GT	GAS	1100	39467
Gulf Power Co	Pensacola Cogeneration Plant	GT	GAS	1100	39468
Gulf Power Co	Pensacola Cogeneration Plant	GT	GAS	1100	39469
Gulf Power Co	Pensacola Florida Plant	ST	GAS	5000	39474
Gulf Power Co	Pensacola Florida Plant	ST	GAS	5000	39479
JEA	St Vincents Medical Center	GT	GAS	1038	39480
Gainesville Regional Utilities	Deerhaven	GT	NG	24600	39500

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Gainesville Regional Utilities	Deerhaven	GT	NG	24600	39520
Florida Power Corp	Higgins	GT	NG	42925	39555
Kissimmee Utility Authority	Hansel	IC	NG	2070	39557
Gulf Power Co	Crist	ST	NG	28125	39581
Gulf Power Co	Crist	ST	NG	28125	39605
Fort Pierce Utilities Auth	Henry D King	IC	FO2	2750	39608
Fort Pierce Utilities Auth	Henry D King	IC	FO2	2750	39610
New Smyrna Beach Utils Comm	Glencoe Road	IC	FO2	750	39611
New Smyrna Beach Utils Comm	North Causeway	IC	FO2	750	39612
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	2000	39614
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	1100	39614
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	840	39615
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	2000	39617
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	2000	39619
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	1800	39621
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	1000	39621
New Smyrna Beach Utils Comm	Smith Street	IC	FO2	1800	39623
Lake Worth City of	Tom G Smith	ST	NG	26500	39647
Lake Worth City of	Tom G Smith	ST	NG	7500	39655
Gainesville Regional Utilities	John R Kelly	ST	NG	25000	39678
Key West City of	Stock Island	IC	FO2	2500	39680
Key West City of	Stock Island	IC	FO2	2500	39682
Key West City of	Stock Island	IC	FO2	2500	39684
Lakeland City of	C D McIntosh Jr	GT	NG	26640	39704
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39705
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39706
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39706
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39707
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39708
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39708
Florida Power & Light Co	Merritt Square Mall	IC	GAS	700	39709
Florida Power Corp	Pasco Cogen Ltd	IC	GAS	1250	39710
Florida Power Corp	Pasco Cogen Ltd	IC	GAS	1250	39712
Lakeland City of	C D McIntosh Jr	IC	FO2	2500	39714
Lakeland City of	C D McIntosh Jr	IC	FO2	2500	39717
Florida Power Corp	Avon Park	GT	NG	33790	39749
Gulf Power Co	Blackjack Creek Treating	GT	GAS	500	39749
Gulf Power Co	Blackjack Creek Treating	GT	GAS	500	39750
Gulf Power Co	Blackjack Creek Treating	GT	GAS	500	39750
Gulf Power Co	Blackjack Creek Treating	GT	GAS	500	39751
JEA	Baptist Medical Center	GT	GAS	500	39751
JEA	Baptist Medical Center	GT	GAS	500	39752
JEA	Baptist Medical Center	GT	GAS	500	39752

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Key West City of	Cudjoe	IC	FO2	2300	39754
Key West City of	Cudjoe	IC	FO2	2750	39757
Florida Power Corp	Higgins	GT	NG	33790	39789
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	2000	39791
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	3000	39793
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	3000	39796
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	3000	39798
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	2500	39801
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	2500	39803
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	2000	39805
Florida Power Corp	Higgins	GT	NG	33790	39837
Tampa Electric Co	Cutrale Citrus Juices USA Inc	ST	GAS	1500	39839
Florida Power & Light Co	Lauderdale	GT	NG	34228	39881
Florida Power & Light Co	Lauderdale	GT	NG	34228	39923
Florida Power & Light Co	Lauderdale	GT	NG	34228	39966
Florida Power & Light Co	Lauderdale	GT	NG	34228	40008
Florida Power & Light Co	Lauderdale	GT	NG	34228	40051
Florida Power & Light Co	Lauderdale	GT	NG	34228	40093
Florida Power & Light Co	Lauderdale	GT	NG	34228	40136
Florida Power & Light Co	Lauderdale	GT	NG	34228	40178
Florida Power & Light Co	Lauderdale	GT	NG	34228	40220
Florida Power & Light Co	Lauderdale	GT	NG	34228	40263
Florida Power & Light Co	Lauderdale	GT	NG	34228	40305
Florida Power & Light Co	Lauderdale	GT	NG	34228	40348
Key West City of	Stock Island	GT	FO2	23450	40368
Key West City of	Big Pine	IC	FO2	2750	40370
Key West City of	Stock Island	GT	FO2	19770	40388
Key West City of	Stock Island	GT	FO2	19770	40406
Tallahassee City of	S O Purdom	GT	NG	15000	40418
Tallahassee City of	S O Purdom	GT	NG	15000	40430
Florida Power & Light Co	Lauderdale	GT	NG	34228	40472
Florida Power & Light Co	Lauderdale	GT	NG	34228	40515
Florida Power & Light Co	Lauderdale	GT	NG	34228	40557
Florida Power & Light Co	Lauderdale	GT	NG	34228	40599
Florida Power & Light Co	Lauderdale	GT	NG	34228	40642
Florida Power & Light Co	Lauderdale	GT	NG	34228	40684
Florida Power & Light Co	Lauderdale	GT	NG	34228	40727
Florida Power & Light Co	Lauderdale	GT	NG	34228	40769
Florida Power & Light Co	Lauderdale	GT	NG	34228	40812
Florida Power & Light Co	Lauderdale	GT	NG	34228	40854
Florida Power & Light Co	Lauderdale	GT	NG	34228	40896
Florida Power & Light Co	Lauderdale	GT	NG	34228	40939

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
Tampa Electric Co	Big Bend	GT	FO2	78750	41019
Tampa Electric Co	Big Bend	GT	FO2	78750	41099
Florida Power Corp	Debary	GT	FO2	66870	41164
Gainesville Regional Utilities	John R Kelly	GT	NG	16320	41179
Gainesville Regional Utilities	John R Kelly	GT	NG	16320	41194
Gainesville Regional Utilities	John R Kelly	GT	NG	16320	41209
Florida Power Corp	Debary	GT	FO2	115000	41302
Florida Power Corp	Debary	GT	FO2	66870	41367
Tampa Electric Co	Phillips	IC	FO2	600	41367
Florida Power & Light Co	Port Everglades	GT	NG	34228	41410
Florida Power & Light Co	Port Everglades	GT	NG	34228	41452
Florida Power & Light Co	Port Everglades	GT	NG	34228	41495
Florida Power & Light Co	Port Everglades	GT	NG	34228	41537
Florida Power & Light Co	Port Everglades	GT	NG	34228	41580
Florida Power & Light Co	Port Everglades	GT	NG	34228	41622
Florida Power & Light Co	Port Everglades	GT	NG	34228	41664
Florida Power & Light Co	Port Everglades	GT	NG	34228	41707
Florida Power & Light Co	Port Everglades	GT	NG	34228	41749
Florida Power & Light Co	Port Everglades	GT	NG	34228	41792
Florida Power & Light Co	Port Everglades	GT	NG	34228	41834
Florida Power & Light Co	Port Everglades	GT	NG	34228	41877
Florida Power Corp	Debary	GT	FO2	66870	41942
JEA	Northside Generating	GT	FO2	62100	42003
Florida Power Corp	G E Turner	GT	FO2	71200	42085
Florida Power Corp	Debary	GT	FO2	66870	42150
Florida Power Corp	G E Turner	GT	FO2	71200	42230
Florida Power Corp	Debary	GT	FO2	66870	42295
Lake Worth City of	Tom G Smith	IC	FO2	2000	42297
Lake Worth City of	Tom G Smith	IC	FO2	2000	42299
Lake Worth City of	Tom G Smith	IC	FO2	2000	42301
Lake Worth City of	Tom G Smith	IC	FO2	2000	42303
Lake Worth City of	Tom G Smith	IC	FO2	2000	42305
Florida Power Corp	Debary	GT	FO2	66870	42370
JEA	J D Kennedy	GT	FO2	56200	42433
Florida Power Corp	Intercession City	GT	FO2	56700	42494
JEA	J D Kennedy	GT	FO2	56200	42557
JEA	Northside Generating	GT	FO2	62100	42618
Florida Power Corp	Intercession City	GT	FO2	56700	42679
Florida Power Corp	Suwannee River	GT	FO2	61200	42746
Lake Worth City of	Tom G Smith	ST	NG	7500	42754
Florida Power Corp	Intercession City	GT	FO2	56700	42815
Florida Power Corp	Bayboro	GT	FO2	56700	42873
Florida Power Corp	Intercession City	GT	FO2	56700	42934
Florida Power Corp	P L Bartow	GT	FO2	55700	42987

Utility	Plant Name	Unit Type	Fuel	Nameplate Rating	Cumulative MW
JEA	Northside Generating	GT	FO2	62100	43049
Florida Power Corp	Bayboro	GT	FO2	56700	43107
Florida Power Corp	Bayboro	GT	FO2	56700	43165
Florida Power Corp	Intercession City	GT	FO2	56700	43226
Florida Power Corp	P L Bartow	GT	FO2	55700	43279
JEA	Northside Generating	GT	FO2	62100	43340
Florida Power Corp	Bayboro	GT	FO2	56700	43398
Florida Power Corp	Intercession City	GT	FO2	56700	43459
JEA	J D Kennedy	GT	FO2	56200	43522
Gulf Power Co	Lansing Smith	GT	FO2	41850	43562
Lakeland City of	Larsen Memorial	GT	NG	11250	43576
Lakeland City of	Larsen Memorial	GT	NG	11250	43590
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43654
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43718
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43782
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43846
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43910
Florida Power & Light Co	Fort Myers	GT	FO2	62000	43974
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44039
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44103
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44167
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44231
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44295
Florida Power & Light Co	Fort Myers	GT	FO2	62000	44359
Florida Keys El Coop Assn Inc	Marathon	IC	FO2	3500	44362
Florida Power & Light Co	Turkey Point	IC	FO2	2750	44365
Florida Power & Light Co	Turkey Point	IC	FO2	2750	44367
Florida Power & Light Co	Turkey Point	IC	FO2	2750	44370
Florida Power & Light Co	Turkey Point	IC	FO2	2750	44372
Florida Power & Light Co	Turkey Point	IC	FO2	2750	44374
Key West City of	Stock Island	IC	FO2	9600	44383
Key West City of	Stock Island	IC	FO2	9600	44392
Tampa Electric Co	Big Bend	GT	FO2	18000	44409
Tampa Electric Co	F J Gannon	GT	FO2	18000	44426
Florida Power Corp	Avon Park	GT	FO2	33790	44458
Florida Power Corp	Rio Pinar	GT	FO2	19290	44474
Florida Power Corp	G E Turner	GT	FO2	19290	44490
Gainesville Regional Utilities	John R Kelly	ST	NG	18750	44504
Alabama Electric Coop Inc	Portland	GT	FO2	11000	44515
Florida Power Corp	G E Turner	GT	FO2	19290	44531
Lake Worth City of	Tom G Smith	GT	FO2	30800	44562