Progress Energy

April 1, 2010

VIA HAND DELIVERY

Ms. Ann Cole, Commission Clerk
Florida Public Servce Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

100000-OT

Re: Ten-Year Site Plan as of December 31, 2009

Dear Ms. Cole:

Pursuant to Rule 25-22.071, F.A.C., please find enclosed for filing the original and twenty-five (25) copies of Progress Energy Florida, Inc.'s 2010 Ten-Year Site Plan.

Thank you for your assistance in this matter. Please feel free to call me at (727) 820-5184 should you have any questions.

Sincerely,

John T. Burnett LMS

John T. Burnett

JTB:lms
Enclosure

COM ___
APA ___
ECR ___
GCL 2
RAD 2
SSC ___
ADM ___
OPC ___
CLK 2

100000-OT

Progress Energy Florida, Inc.
Ten-Year Site Plan

April 2010

2010-2019

Submitted to:
Florida Public Service Commission

Progress Energy

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF
REQUIRED SCHEDULES

LIST OF
TABLES AND FIGURES

CODE IDENTIFICATION SHEET

Generating Unit Type

ST - Steam Turbine - Non-Nuclear
NP - Steam Power - Nuclear
GT - Gas Turbine
CT - Combustion Turbine
CC - Combined cycle
SPP - Small Power Producer
COG - Cogeneration Facility

Fuel Type

NUC - Nuclear (Uranium)
NG - Natural Gas
RFO - No. 6 Residual Fuel Oil
DFO - No. 2 Distillate Fuel Oil
BIT - Bituminous Coal
MSW - Municipal Solid Waste
WH - Waste Heat
BIO - Biomass

Fuel Transportation

WA - Water
TK - Truck
RR - Railroad
PL - Pipeline
UN - Unknown

Future Generating Unit Status

A - Generating unit capability increased
D – Generating unit capability decreased
FC - Existing generator planned for conversion to another fuel or energy source
P - Planned for installation but not authorized; not under construction
RP - Proposed for repowering or life extension
RT - Existing generator scheduled for retirement
T - Regulatory approval received but not under construction
U - Under construction, less than or equal to 50% complete
V - Under construction, more than 50% complete

INTRODUCTION

Section 186.801 of the Florida Statutes requires electric generating utilities to submit a Ten-Year Site Plan (TYSP) to the Florida Public Service Commission (FPSC). The TYSP includes historical and projected data pertaining to the utility's load and resource needs as well as a review of those needs. Florida Power Corporation d/b/a Progress Energy Florida, Inc.'s TYSP is compiled in accordance with FPSC Rules 25-22.070 through 22.072, Florida Administrative Code.

Progress Energy Florida, Inc.'s (PEF) TYSP is based on the projections of long-term planning requirements that are dynamic in nature and subject to change. These planning documents should be used for general guidance concerning PEF's planning assumptions and projections, and should not be taken as an assurance that particular events discussed in the TYSP will materialize or that particular plans will be implemented. Information and projections pertinent to periods further out in time are inherently subject to greater uncertainty.

This TYSP document contains four chapters as indicated below:

- **CHAPTER 1 - DESCRIPTION OF EXISTING FACILITIES**

  This chapter provides an overview of PEF's generating resources as well as the transmission and distribution system.

- **CHAPTER 2 - FORECAST OF ELECTRICAL POWER DEMAND AND ENERGY CONSUMPTION**

  Chapter 2 presents the history and forecast for load and peak demand as well as the forecast methodology used. DSM savings and fuel requirement projections are also included.

- **CHAPTER 3 - FORECAST OF FACILITIES REQUIREMENTS**

  The resource planning forecast, transmission planning forecast as well as the proposed generating facilities and bulk transmission line additions status are discussed in Chapter 3.

- **CHAPTER 4 - ENVIRONMENTAL AND LAND USE INFORMATION**

  Preferred and potential site locations along with any environmental and land use information are presented in this chapter.

CHAPTER 1

DESCRIPTION OF EXISTING FACILITIES

Progress Energy

CHAPTER 1

DESCRIPTION OF EXISTING FACILITIES

EXISTING FACILITIES OVERVIEW

OWNERSHIP

Florida Power Corporation d/b/a Progress Energy Florida, Inc. (PEF or the Company) is a wholly owned subsidiary of Progress Energy, Inc. (Progress Energy). Congress enacted legislation in 2005 repealing the Public Utilities Holding Company Act of 1935 (PUHCA) effective February 8, 2006. Subsequent to that date, Progress Energy is no longer subject to regulation by the Securities and Exchange Commission as a public utility holding company.

AREA OF SERVICE

PEF has an obligation to serve approximately 1.6 million customers in Florida. Its service area covers approximately 20,000 square miles in west central Florida and includes the densely populated areas around Orlando, as well as the cities of Saint Petersburg and Clearwater. PEF is interconnected with 22 municipal and nine rural electric cooperative systems. PEF is subject to the rules and regulations of the Federal Energy Regulatory Commission (FERC), the Nuclear Regulatory Commission (NRC), and the Florida Public Service Commission (FPSC). PEF's Service Area is shown in Figure 1.1.

TRANSMISSION/DISTRIBUTION

The Company is part of a nationwide interconnected power network that enables power to be exchanged between utilities. The PEF transmission system includes approximately 5,000 circuit miles of transmission lines. The distribution system includes approximately 18,000 circuit miles of overhead distribution conductors and approximately 13,000 circuit miles of underground distribution cable.

ENERGY MANAGEMENT and ENERGY EFFICIENCY

PEF customers participating in the Company's residential Energy Management program help to manage future growth and costs. Approximately 393,000 customers participated in the Energy

Management program at the end of 2009, contributing about 770 MW of winter peak-shaving capacity for use during high load periods.

PEF's Demand-Side Management (DSM) plan currently consists of seven residential programs, seven commercial and industrial programs, and one research and development program. The FPSC issued Final Order PSC-09-0855-FOF-EG on December 30, 2009. This Order requires PEF to adopt DSM goals based on an Enhanced Total Resource Cost test (E-TRC) plus the addition of PEF's top-ten less than two year payback efficiency measures based on energy savings. PEF will be expected to submit a new plan designed to meet the approved goals for the ten-year period on March 30, 2010 or as modified by further FPSC action.

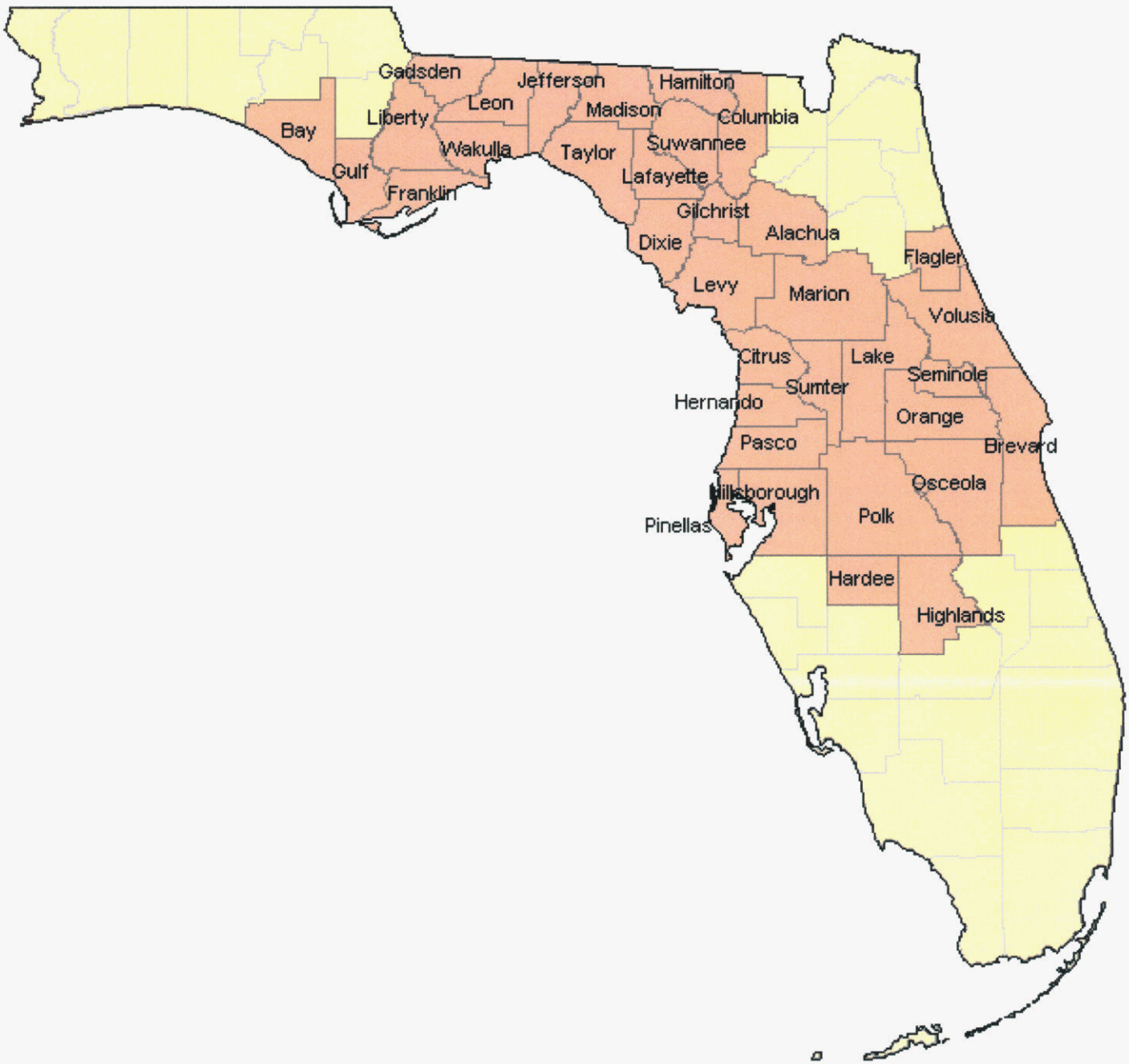
TOTAL CAPACITY RESOURCE

As of December 31, 2009, PEF had total summer capacity resources of 11,587 MW consisting of installed capacity of 9,942 MW (excluding Crystal River Unit 3 joint ownership) and 1,645 MW of firm purchased power. Additional information on PEF's existing generating resources can be found in Schedule 1 and Table 3.1.

FIGURE 1.1

PROGRESS ENERGY FLORIDA

Service Area Map



PROGRESS ENERGY FLORIDA

SCHEDULE 1

EXISTING GENERATING FACILITIES

AS OF DECEMBER 31, 2009

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				FUEL		FUEL TRANSPORT			COML IN-	EXPECTED	GEN. MAX.	NET CAPABILITY	
PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	PRI.	ALT.	PRI.	ALT.	ALT. FUEL DAYS USE	SERVICE MO./YEAR	RETIREMENT MO./YEAR	NAMEPLATE KW	SUMMER MW	WINTER MW
STEAM													
ANCLOTE	1	PASCO	ST	RFO	NG	PL	PL		10/74		556,200	501	517
ANCLOTE	2	PASCO	ST	RFO	NG	PL	PL		10/78		556,200	510	535
CRYSTAL RIVER	1	CITRUS	ST	BIT		RR	WA		10/66		440,550	375	376
CRYSTAL RIVER	2	CITRUS	ST	BIT		RR	WA		11/69		523,800	494	498
CRYSTAL RIVER	3 *	CITRUS	NP	NUC		TK			3/77		890,460	789	805
CRYSTAL RIVER	4	CITRUS	ST	BIT		WA	RR		12/82		739,260	699	732
CRYSTAL RIVER	5	CITRUS	ST	BIT		WA	RR		10/84		739,260	699	709
SUWANNEE RIVER	1	SUWANNEE	ST	RFO	NG	TK/RR	PL		11/53	*****	34,500	30	30
SUWANNEE RIVER	2	SUWANNEE	ST	RFO	NG	TK/RR	PL		11/54	*****	37,500	30	30
SUWANNEE RIVER	3	SUWANNEE	ST	RFO	NG	TK/RR	PL		10/56	*****	75,000	71	78
												4,198	**4,305**
COMBINED-CYCLE													
BARTOW	4	PINELLAS	CC	NG	DFO	PL	TK		6/09		1,253,000	1,133	1,171
HINES ENERGY COMPLEX	1	POLK	CC	NG	DFO	PL	TK	2***	4/99		546,500	462	528
HINES ENERGY COMPLEX	2	POLK	CC	NG	DFO	PL	TK		12/03		548,250	490	563
HINES ENERGY COMPLEX	3	POLK	CC	NG	DFO	PL	TK		11/05		561,000	488	564
HINES ENERGY COMPLEX	4	POLK	CC	NG	DFO	PL	TK		12/07		620,000	472	544
TIGER BAY	1	POLK	CC	NG		PL			8/97		278,100	205	224
												3,250	**3,594**
COMBUSTION TURBINE													
AVON PARK	P1	HIGHLANDS	CT	NG	DFO	PL	TK	3***	12/68	*****	33,790	24	34
AVON PARK	P2	HIGHLANDS	CT	DFO		TK			12/68	*****	33,790	24	32
BARTOW	P1, P3	PINELLAS	CT	DFO		WA			5/72, 6/72		111,400	86	112
BARTOW	P2	PINELLAS	CT	NG	DFO	PL	WA	8	6/72		55,700	43	57
BARTOW	P4	PINELLAS	CT	NG	DFO	PL	WA	8	6/72		55,700	49	61
BAYBORO	P1-P4	PINELLAS	CT	DFO		WA			4/73		226,800	174	233
DEBARY	P1-P6	VOLUSIA	CT	DFO		TK			12/75-4/76		401,220	313	389
DEBARY	P7-P9	VOLUSIA	CT	NG	DFO	PL	TK	8	10/92		345,000	247	295
DEBARY	P10	VOLUSIA	CT	DFO		TK			10/92		115,000	82	97
HIGGINS	P1-P2	PINELLAS	CT	NG	DFO	PL	TK		3/69, 4/69	*****	67,580	51	57
HIGGINS	P3-P4	PINELLAS	CT	NG	DFO	PL	TK	1	12/70, 1/71	*****	85,850	63	71
INTERCESSION CITY	P1-P6	OSCEOLA	CT	DFO		PL,TK			5/74		340,200	280	349
INTERCESSION CITY	P7-P10	OSCEOLA	CT	NG	DFO	PL	PL,TK	5	10/93		460,000	328	376
INTERCESSION CITY	P11 **	OSCEOLA	CT	DFO		PL,TK			1/97		165,000	143	161
INTERCESSION CITY	P12-P14	OSCEOLA	CT	NG	DFO	PL	PL,TK	5	12/00		345,000	229	281
RIO PINAR	P1	ORANGE	CT	DFO		TK			11/70	*****	19,290	12	13
SUWANNEE RIVER	P1, P3	SUWANNEE	CT	NG	DFO	PL	TK	9****	10/80, 11/80		122,400	103	134
SUWANNEE RIVER	P2	SUWANNEE	CT	DFO		TK			10/80		61,200	50	66
TURNER	P1-P2	VOLUSIA	CT	DFO		TK			10/70	*****	38,580	20	32
TURNER	P3	VOLUSIA	CT	DFO		TK			8/74		71,200	63	83
TURNER	P4	VOLUSIA	CT	DFO		TK			8/74		71,200	64	84
UNIV. OF FLA.	P1	ALACHUA	CT	NG		PL			1/94		43,000	46	47
												2,494	**3,064**

* REPRESENTS PEF OWNERSHIP OF UNIT WHICH IS APPROXIMATELY 91.8%.

** THE 143 MW SUMMER CAPABILITY (JUNE THROUGH SEPTEMBER) IS OWNED BY GEORGIA POWER COMPANY

TOTAL RESOURCES (MW) **9,942** **10,963**

*** FOR ENTIRE PLANT

**** P1 REQUIRES A 3-4 DAY OUTAGE IN ORDER TO SWITCH BETWEEN NG & DFO

***** SUWANNEE STEAM UNITS ESTIMATED TO BE SHUTDOWN BY 6/2016; PEAKERS at AVON PARK, HIGGINS, RIO PINAR, TURNER ARE ESTIMATED TO BE PUT IN COLD STAND-BY OR RETIRED BY 6/2019.

CHAPTER 2

FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION

Progress Energy

CHAPTER 2
FORECAST OF ELECTRIC POWER DEMAND
AND
ENERGY CONSUMPTION

OVERVIEW

The information presented in the following Schedules 2, 3, and 4 represents PEF's history and forecast of customers, energy sales (GWh), and peak demand (MW). Assumptions were made to predict a forecast with a 50/50 probability, or the most likely scenario.

PEF's customer growth is expected to average 1.4 percent between 2010 and 2019, which is less than the ten-year historical average of 1.7 percent. Slower population growth, based on the latest projection from the University of Florida's Bureau of Economic and Business Research (BEBR), and weak near-term economic conditions less favorable for in-migrating and job growth, results in a lower customer projection when compared to the higher historical growth rate. This translates into lower projected energy and demand growth rates from historic rate levels.

Net energy for load (NEL), which had grown at an average of 0.8 percent between 2000 and 2009, is expected to increase by 1.0 percent per year from 2010 to 2019. The 2000 – 2009 value decreased significantly from an average of 1.8 percent growth from 2000 – 2008 due to the statewide recession and lower wholesale jurisdictional energy sales in 2009 (-44.2%). Going forward, projected NEL growth reflects aggressive DSM energy savings targets and the lower customer growth rate referenced above. Retail billed energy, which grew at a recession-weakened 0.9 percent average rate historically, is expected to grow at only a 1.1 percent over the next ten-year period.

Summer net firm demand is expected to grow at an average of 0.9 percent per year during the next ten years. This is lower than the 2.4 percent growth rate experienced throughout the last ten years. Again, slower retail customer growth and no summer demand growth from the wholesale jurisdiction are expected going forward. Also, higher DSM demand savings during the projected period holds down growth in peak demand.

Summer net firm retail demand is expected to grow at an average of 0.6 percent per year during the next ten years; this is lower than the 2.4 percent average annual growth rate experienced throughout the last ten-year period. The reasons for the slower growth going forward are the same as those indicated above.

ENERGY CONSUMPTION AND DEMAND FORECAST SCHEDULES

SCHEDULE	DESCRIPTION
2.1, 2.2 and 2.3	History and Forecast of Energy Consumption and Number of Customers by Customer Class
3.1	History and Forecast of Summer Peak Demand (MW)
3.2	History and Forecast of Winter Peak Demand (MW)
3.3	History and Forecast of Annual Net Energy for Load (GWh)
4	Previous Year Actual and Two-Year Forecast of Peak Demand and Net Energy for Load by Month

PROGRESS ENERGY FLORIDA

SCHEDULE 2.1
HISTORY AND FORECAST OF ENERGY CONSUMPTION AND
NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	RURAL AND RESIDENTIAL					COMMERCIAL		
YEAR	PEF POPULATION	MEMBERS PER HOUSEHOLD	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER
2000	3,044,983	2.467	17,116	1,234,286	13,867	10,813	143,475	75,368
2001	3,142,066	2.465	17,604	1,274,672	13,810	11,061	146,983	75,251
2002	3,210,839	2.467	18,754	1,301,515	14,409	11,420	150,577	75,842
2003	3,287,164	2.468	19,429	1,331,914	14,587	11,553	154,294	74,876
2004	3,368,023	2.468	19,347	1,364,677	14,177	11,734	158,780	73,898
2005	3,449,223	2.469	19,894	1,397,012	14,240	11,945	161,001	74,190
2006	3,533,542	2.468	20,021	1,431,743	13,983	11,975	162,774	73,568
2007	3,552,304	2.462	19,912	1,442,853	13,800	12,184	162,837	74,821
2008	3,574,784	2.467	19,328	1,449,041	13,339	12,139	162,569	74,669
2009	3,557,190	2.468	19,399	1,441,325	13,459	11,883	161,390	73,632
2010	3,555,924	2.467	18,637	1,441,396	12,930	11,489	160,790	71,453
2011	3,584,751	2.467	18,181	1,453,081	12,512	11,570	162,399	71,244
2012	3,627,077	2.467	17,943	1,470,238	12,204	11,984	165,166	72,557
2013	3,680,512	2.467	18,209	1,491,898	12,205	12,465	168,555	73,952
2014	3,738,198	2.467	18,187	1,515,281	12,002	12,743	171,886	74,136
2015	3,797,078	2.467	18,194	1,539,148	11,821	12,980	175,179	74,096
2016	3,854,668	2.467	18,434	1,562,492	11,798	13,233	178,395	74,178
2017	3,910,804	2.467	18,539	1,585,247	11,695	13,480	181,529	74,258
2018	3,965,934	2.467	18,704	1,607,594	11,635	13,736	184,608	74,406
2019	4,020,487	2.467	18,872	1,629,707	11,580	13,985	187,651	74,527

PROGRESS ENERGY FLORIDA

SCHEDULE 2.2
HISTORY AND FORECAST OF ENERGY CONSUMPTION AND
NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	INDUSTRIAL						
YEAR	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER	RAILROADS AND RAILWAYS GWh	STREET & HIGHWAY LIGHTING GWh	OTHER SALES TO PUBLIC AUTHORITIES GWh	TOTAL SALES TO ULTIMATE CONSUMERS GWh
2000	4,249	2,535	1,676,134	0	28	2,626	34,832
2001	3,872	2,551	1,517,836	0	28	2,698	35,262
2002	3,835	2,535	1,512,821	0	28	2,822	36,859
2003	4,001	2,643	1,513,810	0	29	2,946	37,958
2004	4,069	2,733	1,488,840	0	28	3,016	38,194
2005	4,140	2,703	1,531,632	0	27	3,171	39,176
2006	4,160	2,697	1,542,455	0	27	3,249	39,432
2007	3,819	2,668	1,431,409	0	26	3,341	39,282
2008	3,786	2,587	1,463,471	0	26	3,276	38,555
2009	3,285	2,487	1,320,869	0	26	3,230	37,824
2010	3,306	2,456	1,346,091	0	26	3,229	36,687
2011	3,351	2,450	1,367,755	0	25	3,249	36,376
2012	3,630	2,450	1,481,633	0	25	3,329	36,911
2013	4,060	2,450	1,657,143	0	25	3,450	38,209
2014	3,991	2,450	1,628,980	0	24	3,525	38,470
2015	3,928	2,450	1,603,265	0	24	3,636	38,762
2016	3,686	2,450	1,504,490	0	23	3,739	39,115
2017	3,664	2,450	1,495,510	0	23	3,818	39,524
2018	3,649	2,450	1,489,388	0	23	3,908	40,020
2019	3,628	2,450	1,480,816	0	23	3,981	40,489

PROGRESS ENERGY FLORIDA

SCHEDULE 2.3
HISTORY AND FORECAST OF ENERGY CONSUMPTION AND
NUMBER OF CUSTOMERS BY CUSTOMER CLASS

(1)	(2)	(3)	(4)	(5)	(6)
YEAR	SALES FOR RESALE GWh	UTILITY USE & LOSSES GWh	NET ENERGY FOR LOAD GWh	OTHER CUSTOMERS (AVERAGE NO.)	TOTAL NO. OF CUSTOMERS
2000	3,732	2,678	41,242	20,004	1,400,299
2001	3,839	1,832	40,933	20,752	1,444,958
2002	3,173	2,535	42,567	21,155	1,475,783
2003	3,359	2,594	43,911	21,665	1,510,516
2004	4,301	2,773	45,268	22,437	1,548,627
2005	5,195	2,507	46,878	22,701	1,583,417
2006	4,220	2,389	46,041	23,182	1,620,396
2007	5,598	2,753	47,633	24,010	1,632,368
2008	6,619	2,484	47,658	24,738	1,638,935
2009	3,696	2,604	44,124	24,993	1,630,195
2010	4,478	2,654	43,819	24,894	1,629,536
2011	3,982	2,392	42,750	24,915	1,642,845
2012	4,910	2,622	44,443	25,172	1,663,026
2013	5,077	2,591	45,877	25,646	1,688,549
2014	5,368	2,620	46,458	26,194	1,715,811
2015	5,443	2,610	46,815	26,754	1,743,531
2016	4,847	2,515	46,477	27,303	1,770,640
2017	4,162	2,657	46,343	27,836	1,797,062
2018	4,211	2,701	46,932	28,362	1,823,014
2019	4,654	2,779	47,922	28,882	1,848,690

PROGRESS ENERGY FLORIDA

SCHEDULE 3.1
HISTORY AND FORECAST OF SUMMER PEAK DEMAND (MW)
BASE CASE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL LOAD MANAGEMENT	RESIDENTIAL CONSERVATION	COMM. / IND. LOAD MANAGEMENT	COMM. / IND. CONSERVATION	OTHER DEMAND REDUCTIONS	NET FIRM DEMAND
2000	8,916	1,319	7,597	277	455	129	48	158	75	7,774
2001	8,847	1,117	7,730	283	418	142	46	159	75	7,722
2002	9,426	1,203	8,223	305	392	156	43	161	75	8,294
2003	8,886	887	7,999	300	355	172	44	164	75	7,776
2004	9,578	1,071	8,507	531	331	188	39	155	110	8,224
2005	10,345	1,118	9,227	448	310	206	38	158	110	9,074
2006	10,142	1257	8,885	329	307	226	37	161	66	9,016
2007	10,926	1544	9,382	334	291	243	45	168	110	9,735
2008	10,588	1512	9,076	500	284	260	71	182	110	9,181
2009	10,866	1618	9,248	262	293	277	97	212	109	9,616
2010	10,400	1,287	9,113	265	301	346	114	219	120	9,037
2011	10,337	1,110	9,227	269	310	419	150	227	120	8,842
2012	10,695	1,279	9,416	310	318	498	172	236	120	9,041
2013	10,972	1,302	9,670	377	327	581	195	245	120	9,126
2014	10,959	1,093	9,866	378	335	669	215	255	120	8,987
2015	11,157	1,099	10,058	372	344	768	236	265	120	9,052
2016	11,418	1,205	10,213	335	353	861	268	276	120	9,195
2017	11,661	1,259	10,402	336	383	954	308	286	120	9,274
2018	11,902	1,315	10,587	337	403	1,035	329	295	120	9,383
2019	12,392	1,621	10,771	338	431	1,110	347	303	120	9,763

Historical Values (2000 - 2009):
Col. (2) = recorded peak + implemented load control + residential and commercial industrial conservation and customer-owned self-service cogeneration
Cols. (5) - (9) = Represent total cumulative capabilities at peak. Col. (8) includes commercial load management and standby generation.
Col. (OTH) =Customer-owned self-service cogeneration.
Col. (10) = (2) - (5) - (6) - (7) - (8) - (9) - (OTH).
Projected Values (2010 - 2019):
Cols. (2) - (4) = forecasted peak without load control, conservation, and customer-owned self-service cogeneration.
Cols. (5) - (9) = cumulative conservation and load control capabilities at peak. Col. (8) includes commercial load management and standby generation.
Col. (OTH) = customer-owned self-service cogeneration
Col. (10) = (2) - (5) - (6) - (7) - (8) - (9) - (OTH).

PROGRESS ENERGY FLORIDA

SCHEDULE 3.2
HISTORY AND FORECAST OF WINTER PEAK DEMAND (MW)
BASE CASE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL LOAD MANAGEMENT	RESIDENTIAL CONSERVATION	COMM . IND. LOAD MANAGEMENT	COMM IND CONSERVATION	OTHER DEMAND REDUCTIONS	NET FIRM DEMAND
1999/00	10,047	1,725	8,319	225	849	234	20	121	182	8,416
2000/01	11,455	1,984	9,474	255	829	259	23	123	185	9,785
2001/02	10,685	1,624	9,061	285	822	285	24	123	188	8,958
2002/03	11,555	1,538	10,017	271	795	313	27	124	191	9,833
2003/04	9,317	1,167	8,150	498	788	343	26	117	262	7,284
2004/05	10,824	1,600	9,224	575	779	371	26	117	283	8,673
2005/06	10,692	1,467	9,225	298	762	413	26	118	239	8,835
2006/07	9,891	1,576	8,315	304	671	454	26	120	262	8,055
2007/08	10,958	1,828	9,130	234	763	487	43	126	278	9,017
2008/09	12,097	2,225	9,869	268	643	520	75	149	290	10,152
2009/10	11,811	1,850	9,961	273	662	580	102	150	291	9,753
2010/11	11,793	1,773	10,020	269	685	644	134	151	302	9,608
2011/12	12,203	2,019	10,184	310	707	713	148	152	305	9,870
2012/13	12,566	2,153	10,413	377	729	786	165	153	307	10,050
2013/14	12,255	1,655	10,600	378	752	862	180	154	309	9,620
2014/15	12,444	1,659	10,785	372	771	948	194	155	311	9,693
2015/16	12,602	1,664	10,938	335	805	1,030	218	157	312	9,746
2016/17	12,892	1,769	11,123	336	839	1,111	252	158	314	9,883
2017/18	13,129	1,824	11,305	337	873	1,181	267	159	316	9,996
2018/19	13,364	1,880	11,484	338	886	1,247	281	160	319	10,133

Historical Values (2000 - 2009):

Col. (2) = recorded peak + implemented load control + residential and commercial industrial conservation and customer-owned self-service cogeneration

Cols. (5) - (9) = Represent total cumulative capabilities at peak. Col. (8) includes commercial load management and standby generation.

Col. (OTH) = Voltage reduction and customer-owned self-service cogeneration.

Col. (10) = (2) - (5) - (6) - (7) - (8) - (9) - (OTH)

Projected Values (2010 - 2019):

Cols. (2) - (4) forecasted peak without load control and conservation

Cols. (5) - (9) = Represent cumulative conservation and load control capabilities at peak. Col. (8) includes commercial load management and standby generation.

Col. (OTH) = Voltage reduction and customer-owned self-service cogeneration.

Col. (10) = (2) - (5) - (6) - (7) - (8) - (9) - (OTH)

PROGRESS ENERGY FLORIDA

SCHEDULE 3.3
HISTORY AND FORECAST OF ANNUAL NET ENERGY FOR LOAD (GWh)
BASE CASE

(1)	(2)	(3)	(4)	(OTH)	(5)	(6)	(7)	(8)	(9)
YEAR	TOTAL	RESIDENTIAL CONSERVATION	COMM. / IND. CONSERVATION	OTHER ENERGY REDUCTIONS*	RETAIL	WHOLESALE	UTILITY USE & LOSSES	NET ENERGY FOR LOAD	LOAD FACTOR (%) **
2000	42,486	334	345	565	34,832	3,732	2,678	41,242	50.5
2001	42,200	354	349	564	35,263	3,839	1,831	40,933	47.5
2002	43,860	377	352	564	36,859	3,173	2,535	42,567	50.0
2003	45,233	402	357	564	37,957	3,359	2,595	43,911	47.7
2004	46,833	426	360	780	38,193	4,301	2,774	45,268	56.5
2005	48,474	455	363	779	39,177	5,195	2,506	46,878	52.3
2006	47,399	484	365	509	39,432	4,220	2,389	46,041	52.1
2007	49,310	511	387	779	39,282	5,598	2,753	47,633	52.3
2008	49,169	541	404	565	38,556	6,619	2,483	47,658	53.1
2009	45,897	571	422	779	37,824	3,696	2,604	44,124	44.5
2010	45,940	828	453	840	36,687	4,478	2,654	43,819	51.3
2011	45,176	1,100	487	840	36,376	3,982	2,392	42,750	50.8
2012	47,203	1,395	522	842	36,911	4,910	2,622	44,443	51.4
2013	48,984	1,706	560	840	38,208	5,077	2,592	45,877	52.1
2014	49,931	2,033	600	840	38,471	5,368	2,619	46,458	55.1
2015	50,715	2,414	646	840	38,763	5,443	2,609	46,815	55.1
2016	50,771	2,764	688	842	39,115	4,847	2,515	46,477	54.4
2017	51,010	3,098	729	840	39,524	4,162	2,657	46,343	53.5
2018	51,939	3,401	766	840	40,021	4,211	2,700	46,932	53.6
2019	53,243	3,681	800	840	40,489	4,654	2,779	47,922	54.0

* Column (OTH) includes Conservation Energy For Lighting and Public Authority Customers, Customer-Owned Self-service Cogeneration.

** Load Factors for historical years are calculated using the actual winter peak demand except the 2004 and 2007 historical load factors which are based on the actual summer peak demand.
Load Factors for future years are calculated using the net firm winter peak demand (Schedule 3.2)

PROGRESS ENERGY FLORIDA

SCHEDULE 4

PREVIOUS YEAR ACTUAL AND TWO-YEAR FORECAST OF PEAK DEMAND AND NET ENERGY FOR LOAD BY MONTH

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ACTUAL 2009		FORECAST 2010		FORECAST 2011	
MONTH	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh
JANUARY	11,201	3,598	10,972	3,590	10,878	3,279
FEBRUARY	11,318	3,175	8,764	2,883	8,623	2,825
MARCH	7,833	3,146	7,487	3,196	7,274	3,129
APRIL	6,824	3,131	7,737	3,200	7,618	3,145
MAY	8,741	3,822	8,865	3,902	8,758	3,834
JUNE	10,254	4,378	9,346	4,175	9,235	4,108
JULY	9,300	4,450	9,658	4,432	9,512	4,355
AUGUST	9,598	4,498	9,715	4,490	9,571	4,404
SEPTEMBER	8,394	4,029	9,069	4,090	8,996	4,024
OCTOBER	8,953	3,819	8,388	3,608	8,332	3,549
NOVEMBER	6,238	2,927	6,963	2,995	6,910	2,919
DECEMBER	7,156	3,151	7,801	3,258	7,753	3,179
TOTAL		44,124		43,819		42,750

NOTE: Recorded Net Peak demands and System requirements including off-system wholesale contracts.

FUEL REQUIREMENTS AND ENERGY SOURCES

PEF's actual and projected nuclear, coal, oil, and gas requirements (by fuel unit) are shown in Schedule 5. PEF's two-year actual and ten-year projected energy sources by fuel type are presented in Schedules 6.1 and 6.2, in GWh and percent (%) respectively. PEF's fuel requirements and energy sources reflect a diverse fuel supply system that is not dependent on any one fuel source. Near term natural gas consumption is projected to increase as plants and purchases with tolling agreements are added to meet future load growth. However, a decrease in future fossil fuel consumption is projected with the addition of planned new, advanced design nuclear generation.

PROGRESS ENERGY FLORIDA

SCHEDULE 5

FUEL REQUIREMENTS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
				-ACTUAL-											
	FUEL REQUIREMENTS		UNITS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	NUCLEAR		TRILLION BTU	66	51	42	64	83	77	82	73	83	76	82	127
(2)	COAL		1,000 TON	5,806	4,749	5,656	5,672	5,748	4,959	4,935	5,547	5,823	5,890	5,480	5,341
(3)	RESIDUAL	TOTAL	1,000 BBL	4,287	1,801	1,332	574	761	496	487	670	657	744	689	514
(4)		STEAM	1,000 BBL	4,287	1,801	1,332	574	761	496	487	670	657	744	689	514
(5)		CC	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(6)		CT	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(7)		DIESEL	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(8)	DISTILLATE	TOTAL	1,000 BBL	372	580	235	189	266	338	325	350	478	434	472	320
(9)		STEAM	1,000 BBL	79	92	88	139	207	293	227	214	236	240	228	235
(10)		CC	1,000 BBL	8	39	0	0	0	0	0	0	0	0	0	0
(11)		CT	1,000 BBL	285	449	147	49	58	45	97	136	242	195	244	86
(12)		DIESEL	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(13)	NATURAL GAS	TOTAL	1,000 MCF	******	144,677	144,008	131,599	127,517	152,580	159,512	154,418	146,422	151,607	156,474	139,913
(14)		STEAM	1,000 MCF	17,380	12,463	17,234	16,451	17,039	16,067	16,087	17,000	15,718	15,923	15,306	15,880
(15)		CC	1,000 MCF	83,148	120,082	120,238	110,504	106,579	131,639	138,313	131,200	121,313	125,229	128,195	115,304
(16)		CT	1,000 MCF	11,767	12,132	6,535	4,643	3,900	4,874	5,112	6,218	9,390	10,455	12,973	8,729
	OTHER (SPECIFY)														
(17)	OTHER, DISTILLATE	ANNUAL	1,000 BBL	N/A	N/A	49	29	23	44	60	73	18	21	24	5
(18)	OTHER, NATURAL GAS	ANNUAL	1,000 MCF	N/A	N/A	0	0	0	0	0	0	0	0	0	0
(18.1)	OTHER, NATURAL GAS	ANNUAL	1,000 MCF	N/A	N/A	9,205	12,183	12,034	17,522	17,939	21,890	20,092	19,940	21,623	15,748

PROGRESS ENERGY FLORIDA

SCHEDULE 6.1

ENERGY SOURCES (GWh)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
				-ACTUAL-											
	ENERGY SOURCES		UNITS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	ANNUAL FIRM INTERCHANGE 1/		GWh	2,719	1,216	663	545	511	934	1,041	1,351	1,661	1,879	2,044	1,473
(2)	NUCLEAR		GWh	6,425	4,945	4,063	6,220	8,293	7,702	8,271	7,360	8,293	7,590	8,271	12,832
(3)	COAL		GWh	14,219	11,089	13,343	13,174	13,337	11,419	11,365	12,869	13,507	13,689	12,769	12,383
(4)	RESIDUAL	TOTAL	GWh	2,534	974	800	323	439	277	271	383	398	457	423	316
(5)		STEAM	GWh	2,534	974	800	323	439	277	271	383	398	457	423	316
(6)		CC	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(7)		CT	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(8)		DIESEL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(9)	DISTILLATE	TOTAL	GWh	168	261	64	22	26	19	44	60	104	84	107	38
(10)		STEAM	GWh	46	52	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWh	6	23	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWh	116	186	64	22	26	19	44	60	104	84	107	38
(13)		DIESEL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(14)	NATURAL GAS	TOTAL	GWh	14,239	18,457	19,305	17,543	16,931	20,726	21,695	20,867	19,560	20,213	20,887	18,446
(15)		STEAM	GWh	1,609	1,044	1,437	1,327	1,388	1,286	1,287	1,378	1,281	1,309	1,260	1,298
(16)		CC	GWh	11,745	16,495	17,238	15,739	15,131	18,955	19,902	18,882	17,412	17,949	18,438	16,319
(17)		CT	GWh	885	918	630	477	412	485	506	607	867	955	1,189	829
(18)	OTHER 2/														
	QF PURCHASES		GWh	2,780	2,920	2,604	2,597	2,601	2,388	1,470	1,469	1,474	1,463	1,461	1,464
	RENEWABLES		GWh	984	1,031	987	976	974	975	973	975	976	968	970	970
	IMPORT FROM OUT OF STATE		GWh	3,639	3273	1,990	1,350	1,331	1,437	1,328	1,481	504	0	0	0
	EXPORT TO OUT OF STATE		GWh	-49	-42	0	0	0	0	0	0	0	0	0	0
(19)	NET ENERGY FOR LOAD		GWh	47,658	44,124	43,819	42,750	44,443	45,877	46,458	46,815	46,477	46,343	46,932	47,922

1/ NET ENERGY PURCHASED (+) OR SOLD (-) WITHIN THE FRCC REGION.

2/ NET ENERGY PURCHASED (+) OR SOLD (-)

PROGRESS ENERGY FLORIDA

SCHEDULE 6.2

ENERGY SOURCES (PERCENT)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
				-ACTUAL-											
	ENERGY SOURCES		UNITS	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	ANNUAL FIRM INTERCHANGE 1/		%	5.7%	2.8%	1.5%	1.3%	1.1%	2.0%	2.2%	2.9%	3.6%	4.1%	4.4%	3.1%
(2)	NUCLEAR		%	13.5%	11.2%	9.3%	14.5%	18.7%	16.8%	17.8%	15.7%	17.8%	16.4%	17.6%	26.8%
(3)	COAL		%	29.8%	25.1%	30.5%	30.8%	30.0%	24.9%	24.5%	27.5%	29.1%	29.5%	27.2%	25.8%
(4)	RESIDUAL	TOTAL	%	5.3%	2.2%	1.8%	0.8%	1.0%	0.6%	0.6%	0.8%	0.9%	1.0%	0.9%	0.7%
(5)		STEAM	%	5.3%	2.2%	1.8%	0.8%	1.0%	0.6%	0.6%	0.8%	0.9%	1.0%	0.9%	0.7%
(6)		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(7)		CT	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(8)		DIESEL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(9)	DISTILLATE	TOTAL	%	0.4%	0.6%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%
(10)		STEAM	%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(11)		CC	%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(12)		CT	%	0.2%	0.4%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%
(13)		DIESEL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(14)	NATURAL GAS	TOTAL	%	29.9%	41.8%	44.1%	41.0%	38.1%	45.2%	46.7%	44.6%	42.1%	43.6%	44.5%	38.5%
(15)		STEAM	%	3.4%	2.4%	3.3%	3.1%	3.1%	2.8%	2.8%	2.9%	2.8%	2.8%	2.7%	2.7%
(16)		CC	%	24.6%	37.4%	39.3%	36.8%	34.0%	41.3%	42.8%	40.3%	37.5%	38.7%	39.3%	34.1%
(17)		CT	%	1.9%	2.1%	1.4%	1.1%	0.9%	1.1%	1.1%	1.3%	1.9%	2.1%	2.5%	1.7%
(18)	OTHER 2/														
	QF PURCHASES		%	5.8%	6.6%	5.9%	6.1%	5.9%	5.2%	3.2%	3.1%	3.2%	3.2%	3.1%	3.1%
	RENEWABLES		%	2.1%	2.3%	2.3%	2.3%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.0%
	IMPORT FROM OUT OF STATE		%	7.6%	7.4%	4.5%	3.2%	3.0%	3.1%	2.9%	3.2%	1.1%	0.0%	0.0%	0.0%
	EXPORT TO OUT OF STATE		%	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(19)	NET ENERGY FOR LOAD		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

1/ NET ENERGY PURCHASED (+) OR SOLD (-) WITHIN THE FRCC REGION.

2/ NET ENERGY PURCHASED (+) OR SOLD (-)

FORECASTING METHODS AND PROCEDURES

INTRODUCTION

Accurate forecasts of long-range electric energy consumption, customer growth, and peak demand are essential elements in electric utility planning. Accurate projections of a utility's future load growth require a forecasting methodology with the ability to account for a variety of factors influencing electric energy usage over the planning horizon. PEF's forecasting framework utilizes a set of econometric models to achieve this end. This section will describe the underlying methodology of the customer, energy, and peak demand forecasts including the principal assumptions incorporated within each. Also included is a description of how DSM impacts the forecast, the development of high and low forecast scenarios, and a review of DSM programs.

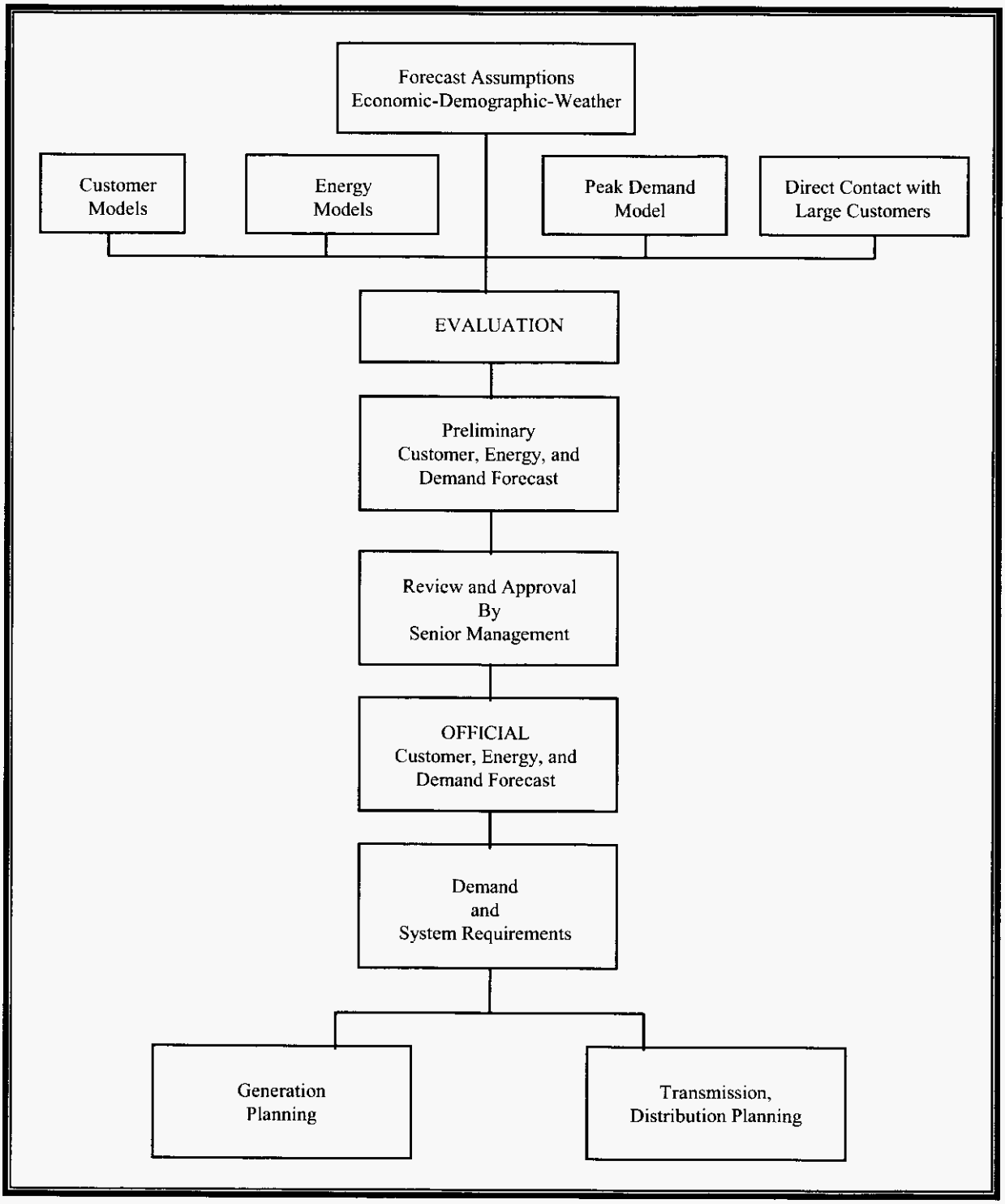
Figure 2.1, entitled "Customer, Energy and Demand Forecast," gives a general description of PEF's forecasting process. Highlighted in the diagram is a disaggregated modeling approach that blends the impacts of average class usage, as well as customer growth, based on a specific set of assumptions for each class. Also accounted for is some direct contact with large customers. These inputs provide the tools needed to frame the most likely scenario of the Company's future demand.

FORECAST ASSUMPTIONS

The first step in any forecasting effort is the development of assumptions upon which the forecast is based. The Financial Services Department develops these assumptions based on discussions with a number of departments within PEF, as well as through the research efforts of a number of external sources. These assumptions specify major factors that influence the level of customers, energy sales, or peak demand over the forecast horizon. The following set of assumptions forms the basis for the forecast presented in this document.

FIGURE 2.1

Customer, Energy, and Demand Forecast



GENERAL ASSUMPTIONS

1. Normal weather conditions for energy sales are assumed over the forecast horizon using a sales-weighted "modified" 20-year average of conditions at seven weather stations across Florida (Saint Petersburg, Tampa, Orlando, Winter Haven, Gainesville, Daytona Beach, and Tallahassee). For kilowatt-hour (kWh) sales projections, the normal weather calculation begins with a historical 20-year average of the service area weighted billing month degree-days then removes the two largest outliers from this average for each of the 12 months for both the heating season and cooling season. Seasonal peak demand projections are based on a 30-year historical average of system-weighted temperatures at time of seasonal peak at the Tampa, Orlando, and Tallahassee weather stations; the other weather stations are not used in developing the historic average because they lack the historic hourly data needed for peak-weather normalization.

2. The population projections produced by the Bureau of Economic and Business Research (BEBR) at the University of Florida as published in "Florida Population Studies" Bulletin No. 153 (March 2009) provide the basis for development of the customer forecast. An update to include a downward revision to state-wide growth made by the Florida Legislature's Office of Economic and Demographic Research in October 2009 was incorporated to capture the latest trends being witnessed in the PEF service area. State and national economic assumptions produced by Economy.Com in their national and Florida forecasts (November 2009) are also included.

3. Within the PEF service area, the phosphate mining industry is the dominant sector in the industrial sales class. Four major customers accounted for 33 percent of the industrial class MWh sales in 2009. These energy intensive customers mine and process phosphate-based fertilizer products for the global marketplace. The supply and demand for their products are dictated by global conditions that include, but are not limited to, foreign competition, national/international agricultural industry conditions, exchange-rate fluctuations, and international trade pacts. Load and energy consumption at the PEF-served mining or chemical processing sites depend heavily on plant operations, which are heavily influenced by these global as well as the local conditions. Going forward, a weaker U.S. currency value on the

foreign exchange is expected to help the industry in two ways. First, American farm commodities have become more competitive overseas which has contributed to higher crop production at home. Second, a weak U.S. dollar results in U.S. fertilizer producers to become more price competitive relative to foreign producers. The PEF forecast reflects an increase in electric energy consumption as a new mine operation is expected to open in the medium term. A significant risk to this projection lies in the volatile price of energy, which is a major cost of both mining and producing phosphoric fertilizers. The fuel mix embedded in PEF's rates versus competitors' rates play a significant role as to where a producer directs the output from self-owned generation facilities, which remove load from PEF generation facilities.

4. PEF supplies load and energy service to wholesale customers on a "full," "partial," and "supplemental" requirement basis. Full requirements (FR) customers' demand and energy is assumed to grow at a rate that approximates their historical trend. However, the impact of the current recession has reduced short term growth expectations. Contracts for this service include the cities of Bartow, Chattahoochee, Mt. Dora, Quincy, Williston, and Winter Park. Partial requirements (PR) customer load is assumed to reflect the current contractual obligations reflected by the nature of the stratified load they have contracted for, plus their ability to receive dispatched energy from power marketers any time it is more economical for them to do so. Contracts for PR service included in this forecast are with the Florida Municipal Power Agency (FMPA), Reedy Creek Utilities, Seminole Electric Cooperative, Inc. (SECI), and the cities of New Smyrna Beach, Tallahassee, Gainesville, and Homestead.

   PEF has negotiated several power sales agreements with SECI beginning in various years over the ten-year horizon. An existing contractual arrangement is a "supplemental" service contract (1983 contract) providing energy over and above stated levels they commit to supply themselves. This contract has been renegotiated and will change from a supplemental nature sale to a "stratified capacity" sale consisting of a base, peaking, and system average pieces beginning in 2014 when the term of this contract expires in December 2013. A firm contract with SECI for stratified intermediate service (October 1995 contract), which includes an additional 150 MW stratified base service in 2012, is contained in this projection. Another load following contract commencing in 2010 and lasting through the forecast horizon is also

contained in this forecast. Finally, an agreement to provide interruptible service at a SECI metering site has also been included in this projection.

5. This forecast assumes that PEF will successfully renew all future franchise agreements.

6. This forecast incorporates demand and energy reductions from PEF's dispatchable and non-dispatchable DSM programs required to meet the approved goals set in December 2009, by the FPSC.

7. Expected energy and demand reductions from customer-owned self-service cogeneration facilities are also included in this forecast. PEF will supply the supplemental load of self-service cogeneration customers. While PEF offers "standby" service to all cogeneration customers, the forecast does not assume an unplanned need for power at time of peak.

8. This forecast assumes that the regulatory environment and the obligation to serve our retail customers will continue throughout the forecast horizon. Regarding wholesale customers, the Company does not plan for generation resources unless a long-term contract is in place. Current FR customers are assumed to renew their contracts with PEF except those who have given notice to terminate. Current PR contracts are projected to terminate as terms reach their expiration date. Deviation from these assumptions can occur, based on information provided by the Portfolio Management Department.

SHORT-TERM ECONOMIC ASSUMPTIONS

The economic outlook for this forecast was developed in late-2009 as the national recession neared its second anniversary. This recession has had a significant negative effect upon the Florida economy, especially in the homebuilding and affiliated industries. While the nation's economy showed signs of leveling off, the Florida economy continued to show a decrease in jobs and an increase in foreclosure rates. By December 2009, PEF was expecting to report its eighteenth straight month of year-over-year decline in customer growth.

As the forecast was being developed, significant gains in confidence and value had returned to the stock market. Improvement had begun in the U.S. manufacturing sector as inventories needed to be replenished. Initial claims for unemployment insurance had decreased to where positive employment growth was expected nationally in the near future. Federal Reserve Board policies to prevent a severe depression appeared to be working but complaints that bank credit remained unavailable impacted confidence. In Florida, the rising home foreclosures and falling home values as well as a large inventory of unsold homes worsened throughout 2009. Construction employment continued to decline contributing to the unusually high unemployment levels in Florida.

The short term outlook expects a slow recovery as population mobility returns to previous rates. The slow job growth in Florida, as well as the inability for potential new residents to sell their homes and move south, stunted the State's population growth. Due to a large inventory of homes for sale in the State, the short term prospect for residential construction employment remains unchanged. Shuttered manufacturing capacity in the homebuilding industries – stone, clay, glass, and lumber products – will remain weak for another year or two. The significant decline in home values across Florida has improved affordability for many home seekers previously priced out of the market. Once bank's lending levels return to normal, conditions will favor a return to strong growth for the Florida housing market and support industries.

LONG-TERM ECONOMIC ASSUMPTIONS

The long term economic outlook assumes that changes in economic and demographic conditions, as well as technological change in the electric utility industry, will follow a trended behavior pattern. The main focus involves identifying these trends. No attempt is made to predict business cycle fluctuations or rapid penetration of a significant technological breakthrough impacting electric utility energy sales during this period.

Population Growth Trends

This forecast assumes Florida will experience slower new resident migration and population growth over parts of the long term, as reflected in the BEBR projections. Florida's climate and low cost of living have historically attracted a major share of the retirement population from the eastern half of the United States. This will continue to occur primarily because the retiring baby-

boom generation will increase the number of available retirees capable of moving to the South. Working against this significant trend will be several aesthetic and economic factors. First, the enormous growth in population and corresponding development of the 1980s, 1990s, and early 2000s made portions of Florida less desirable and less affordable for retirement living. This perceived diminished quality of retiree life, along with increasing competition from neighboring states, will cause a slight decline in Florida's share of these prospective new residents over the long term. Second, and to a lesser extent, there is a lingering fear for safety and expense from hurricane damage.

Economic Growth Trends

Since the beginning of the post-9/11 period, Florida experienced a 1980s-style population explosion and rapid service-sector job creation. The State has benefited greatly from generational lows in interest rates, which, along with investors' unfriendly attitude toward the equity markets, set the stage for a tremendous surge in home construction. The national level of homebuilding in 2004-2006, set an all-time record. This growth produced strong gains in both the construction industry and service-producing sectors of the Florida economy.

As observed in recent years, however, a lower rate of income growth is expected going forward, indicating a slow pace of overall economic growth until the banking sector strength returns to levels observed in the past.

Many national and state policy decisions will have an impact on the price of electricity over the long term. This will play a major role in the amount of electricity projected to be consumed in the forecast. While most historical fluctuations in price have been fuel price driven, future changes will also incorporate decisions to provide for possible climate change legislation, the purchase or ownership of renewable energy generation, and the impacts of more aggressive demand-side management goals. Each may contribute to an upward trend on the price per kWh paid by the consumer. PEF has witnessed a significant drop off in the average kWh per residential customer since its peak in 2003. Much can be attributed to an average annual increase of 5.3 percent in real residential price per kWh between 2003 and 2009 when fuel prices

increased. The projection for real electric prices is much flatter, but future policy decisions will have an impact on the Company's pass-through charges.

FORECAST METHODOLOGY

The PEF forecast of customers, energy sales, and peak demand is developed using customer class-specific econometric models. These models are expressly designed to capture class-specific variation over time. By modeling customer growth and average energy usage individually, subtle changes in existing customer usage are better captured as well as growth from new customers. Peak demand models are projected on a disaggregated basis as well. This allows for appropriate handling of individual assumptions in the areas of wholesale contracts, load management, and interruptible service.

ENERGY AND CUSTOMER FORECAST

In the retail jurisdiction, customer class models have been specified showing a historical relationship to weather and economic/demographic indicators using monthly data for sales models and annual data for customer models. Sales are regressed against "driver" variables that best explain monthly fluctuations over the historical sample period. Forecasts of these input variables are either derived internally or come from a review of the latest projections made by several independent forecasting concerns. The external sources of data include Moody's Economy.Com and the University of Florida's Bureau of Economic and Business Research (BEBR). Internal company forecasts are used for projections of electricity price, weather conditions, and the length of the billing month. Normal weather, which is assumed throughout the forecast horizon, is based on a twenty-year modified average of heating and cooling degree-days by month as measured at several weather stations throughout Florida for energy projections and temperatures around the hour of peak for the firm retail demand forecast. Projections of PEF's demand-side management (conservation) programs are also incorporated as reductions to the forecast. Specific sectors are modeled as follows:

Residential Sector

Residential kWh usage per customer is modeled as a function of real personal income, cooling degree-days, heating degree-days, the real price of electricity to the residential class and the average

number of billing days in each sales month. This equation captures significant variation in residential usage caused by economic cycles, weather fluctuations, electric price movements, and sales month duration. Projections of kWh usage per customer combined with the customer forecast provide the forecast of total residential energy sales. The residential customer forecast is developed by correlating annual customer growth with PEF service area population growth. County level population projections for the 29 counties in which PEF serves residential customers are provided by the BEBR.

Commercial Sector

Commercial MWh energy sales are forecast based on commercial sector (non-agricultural, non-manufacturing and non-governmental) employment, the real price of electricity to the commercial class, the average number of billing days in each sales month and heating and cooling degree-days. The measure of cooling degree-days utilized here differs slightly from that used in the residential sector reflecting different temperature base sensitivities, when heating and cooling load become observable. Commercial customers are projected as a function of the number of residential customers served.

Industrial Sector

Energy sales to this sector are separated into two sub-sectors. A significant portion of industrial energy use is consumed by the phosphate mining industry. Because this one industry is a 33 percent share of the total industrial class, it is separated and modeled apart from the rest of the class. The term "non-phosphate industrial" is used to refer to those customers who comprise the remaining portion of total industrial class sales. Both groups are impacted significantly by changes in economic activity. However, adequately explaining sales levels requires separate explanatory variables. Non-phosphate industrial energy sales are modeled using Florida manufacturing employment and a Florida industrial production index, the real price of electricity to the industrial class, and the average number of sales month billing days.

The industrial phosphate mining industry is modeled using customer-specific information with respect to expected market conditions. Since this sub-sector is comprised of only four customers, the forecast is dependent upon information received from direct customer contact. PEF industrial

customer representatives provide specific phosphate customer information regarding customer production schedules, inventory levels, area mine-out, and start-up predictions, and changes in self-service generation or energy supply situations over the forecast horizon.

Street Lighting

Electricity sales to the street and highway lighting class has varied up and down but overall has remained flat for the past 15 years. A slight decline is expected as improvements in lighting efficiency are projected. The number of accounts, which has dropped by two-thirds in the past 14 years due to most transferring to public authority ownership, is expected to decline further before leveling off in the intermediate term. A simple time-trend was used to project energy consumption and customer growth in this class.

Public Authorities

Energy sales to public authorities (SPA), comprised mostly of government operated services, is also projected to grow with the size of the service area. The level of government services, and thus energy use per customer, can be tied to the population base, as well as to the state of the economy. Factors affecting population growth will affect the need for additional governmental services (i.e. public schools, city services, etc.) thereby increasing SPA energy usage per customer. Government employment has been determined to be the best indicator of the level of government services provided. This variable, along with heating and cooling degree-days (class specific), the real price of electricity and the average number of sales month billing days, results in a significant level of explained variation over the historical sample period. Intercept shift variables are also included in this model to account for the large change in school-related energy use in the billing months of January, July, and August. The SPA customer forecast is projected linearly as a function of a time-trend.

Sales for Resale Sector

The Sales for Resale sector encompasses all firm sales to other electric power entities. This includes sales to other utilities (municipal or investor-owned) as well as power agencies (rural electric authority or municipal).

Seminole Electric Cooperative, Inc. (SECI) is a wholesale, or sales for resale, customer of PEF on both a supplemental contract basis and contract demand basis. Under the supplemental contract, PEF provides service for those energy requirements above the level of generation capacity served by either SECI's own facilities or its firm purchase obligations. Monthly supplemental energy is developed using an average historical load shape of total SECI load in the PEF control area, subtracting out the level of SECI "committed" capacity from each hour. Beyond supplemental service, PEF has several agreements with SECI to serve various types of stratified demand levels deemed by their resource planners as necessary.

The municipal sales for resale class includes a number of customers, divergent not only in scope of service, (i.e. full or partial requirement), but also in composition of ultimate consumers. Each customer is modeled separately in order to accurately reflect its individual profile. Several of the customers in this class are municipalities whose full energy requirements are supplied by PEF. The full requirement customers' energy projections grow at a rate that approximates their historical trend with additional information coming from the respective city officials. PEF serves partial requirement service (PR) to municipalities such as New Smyrna Beach (NSB), Homestead, Gainesville, and Tallahassee, and other power providers like FMPA and Reedy Creek Utilities. In each case, these customers contract with PEF for a specific level and type of demand needed to provide their particular electrical system with an appropriate level of reliability. The energy forecast for each contract is derived using its historical load factors where enough history exists, or typical load factors for a given type of contracted stratified load. The energy projections for FMPA also include a "losses service contract" for energy PEF supplies to FMPA for transmission losses incurred when delivering power to their ultimate customers in PEF's transmission area. This projection is based on the projected requirements of the aggregated needs of the cities of Ocala, Leesburg, Bushnell, Havana, and Newberry.

PEAK DEMAND FORECAST

The forecast of peak demand also employs a disaggregated econometric methodology. For seasonal (winter and summer) peak demands, as well as each month of the year, PEF's coincident system peak is separated into five major components. These components consist of potential firm retail

load, conservation and load management program capability, wholesale demand, company use demand, and interruptible demand.

Potential firm retail load refers to projections of PEF retail hourly seasonal net peak demand (excluding the non-firm interruptible/curtailable/standby services) before the cumulative effects of any conservation activity or the activation of PEF's General Load Reduction Plan. The historical values of this series are constructed to show the size of PEF's firm retail net peak demand assuming no utility induced conservation or load control had taken place. The value of constructing such a "clean" series enables the forecaster to observe and correlate the underlying trend in retail peak demand to total system customer levels and coincident weather conditions at the time of the peak without the impacts of year-to-year variation in conservation activity or load control reductions. Seasonal peaks are projected using historical seasonal peak data regardless of which month the peak occurred. The projections become the potential retail demand projection for the months of January (winter) and August (summer) since this is typically when the seasonal peaks occur. The non-seasonal peak months are projected the same as the seasonal peaks, but the analysis is limited to the specific month being projected.

Energy conservation and direct load control estimates are consistent with PEF's DSM goals that have been established by the FPSC. These estimates are incorporated into the MW forecast. Projections of dispatchable and cumulative non-dispatchable DSM impacts are subtracted from the projection of potential firm retail demand resulting in a projected series of retail monthly peak demand figures.

Sales for Resale demand projections represent load supplied by PEF to other electric suppliers such as SECI, FMPA, and other electric transmission and distribution entities. The SECI supplemental demand projection is based on a trend of their historical demand within the PEF control area. The level of MW to be served by PEF is dependent upon the amount of generation resources SECI supplies itself or contracts from others. An assumption is made that SECI will shift their level of self-serve resources to meet their base and intermediate load needs. For Partial Requirement demand projections, contract levels dictate the level of monthly demands. The Full Requirement

municipal demand forecast is estimated for individual cities using historically trended growth rates adjusted for current economic conditions.

PEF "company use" at the time of system peak is estimated using load research metering studies and is assumed to remain stable over the forecast horizon as it has historically. The interruptible and curtailable service (IS and CS) load component is developed from historic trends, as well as the incorporation of specific information obtained from PEF's large industrial accounts by account executives.

Each of the peak demand components described above is a positive value except for the DSM program MW impacts and IS and CS load. These impacts represent a reduction in peak demand and are assigned a negative value. Total system firm peak demand is then calculated as the arithmetic sum of the five components.

CONSERVATION

PEF's DSM performance is presented in the following tables, which compare the conservation savings actually achieved through PEF's DSM programs for the reporting years of 2005 through 2009 with the Commission approved conservation goals.

On August 9, 2004, the FPSC issued a Proposed Agency Action (PAA) Order approving new conservation goals for PEF that span the ten-year period from 2005 through 2014, as well as a new DSM Plan for PEF that was specifically designed to meet the new conservation goals (Docket 040031-EG, Order No. PSC-04-0769-PAA-EG). On January 5, 2007, the FPSC issued a PAA Order approving 39 additional DSM measures and two residential programs, which will serve to increase the demand and energy savings available through PEF's DSM Plan (Docket 060647: Consummating Order PSC-07-0017-CO-EG making Order PSC-06-1018-TRF-EG effective and final).

Residential Conservation Savings Goals and Achievements

	Summer MW		Winter MW		Annual GWh Energy	
Year	Goal	Achieved	Goal	Achieved	Goal	Achieved
2005	13	18	43	48	21	29
2006	21	37	75	99	35	58
2007	30	58	108	153	50	85
2008	38	87	142	207	65	117
2009	47	118	175	266	80	157

Commercial Conservation Savings Goals and Achievements

	Summer MW		Winter MW		Annual GWh Energy	
Year	Goal	Achieved	Goal	Achieved	Goal	Achieved
2005	4	8	3	6	3	3
2006	7	16	7	12	6	9
2007	11	44	10	38	9	30
2008	14	97	14	87	12	77
2009	18	140	17	126	15	125

The forecasts contained in this TYSP are based on Final Order PSC-09-0855-FOF-EG. This December 30, 2009 Order requires PEF to adopt DSM goals based on an Enhanced Total Resource Cost test (E-TRC) plus the addition of PEF's top ten less than two year payback efficiency measures based on energy savings. This decision represents a departure from the FPSC's traditional use of the Rate Impact Measure (RIM), resulting in significantly higher goals. PEF's goals over the next ten years are: 1,183 summer MW, 1,072 winter MW, and 3,488 GWh. PEF has filed a Motion for Reconsideration with the FPSC to correct what it believes are apparent oversights or errors. If accepted by the FPSC, PEF's motion would adjust goals over the next ten years to: 808 summer MW, 933 winter MW, and 1,792 GWh. PEF will file a DSM Plan designed to meet the goals contained within this order on March 30, 2010 or as modified by further FPSC action. Included in the December 30, 2009 Commission's Order was a directive for PEF to file pilot programs focusing on encouraging solar water heating and solar PV

technologies in its DSM Program Plan. Expenditures for recovery for these pilots are limited to $6,467,592 annually.

PEF's current DSM Plan consists of seven residential programs, seven commercial and industrial programs, and one research and development program. The programs are subject to periodic monitoring and evaluation for the purpose of ensuring that all DSM resources are acquired in a cost-effective manner and that the program savings are durable. The following is a brief description of these programs.

RESIDENTIAL PROGRAMS

Home Energy Check Program

This energy audit program provides customers with an analysis of their current energy use and recommendations on how they can save on their electricity bills through low-cost or no-cost energy-saving practices and measures. The Home Energy Check program offers PEF customers the following types of audits: Type 1: Free Walk-Through Audit (Home Energy Check); Type 2: Customer-Completed Mail In Audit (Do It Yourself Home Energy Check); Type 3: Online Home Energy Check (Internet Option)-a customer-completed audit; Type 4: Phone Assisted Audit – a customer assisted survey of structure and appliance use; Type 5: Computer Assisted Audit; Type 6: Home Energy Rating Audit (Class I, II, III); Type 7: Student Mail In Audit - a student-completed audit. The Home Energy Check Program serves as the foundation of the Home Energy Improvement Program in that the audit is a prerequisite for participation in the energy saving measures offered in the Home Energy Improvement Program.

Home Energy Improvement Program

This is the umbrella program to increase energy efficiency for existing residential homes. It combines efficiency improvements to the thermal envelope with upgraded electric appliances. The program provides incentives for attic insulation upgrades, duct testing and repair, and high efficiency electric heat pumps. Additional measures within this program include spray-in wall insulation, central AC 14 SEER non-electric heat, and supply and return plenum duct seal, proper sizing of high efficiency HVAC, HVAC commissioning, reflective roof coating for

manufactured homes, reflective roof for single-family homes, window film or screen, and replacement windows.

Residential New Construction Program

This program promotes energy efficient new home construction in order to provide customers with more efficient dwellings combined with improved environmental comfort. The program provides education and information to the design and building community on energy efficient equipment and construction. It also facilitates the design and construction of energy efficient homes by working directly with the builders to comply with program requirements. The program provides incentives to the builder for high efficiency electric heat pumps and high performance windows. The highest level of the program incorporates the U.S. Environmental Protection Agency's Energy Star Homes Program and qualifies participants for cooperative advertising. Additional measures within the Residential New Construction Program include HVAC commissioning, window film or screen, reflective roof for single-family homes, attic spray-on foam insulation, conditioned space air handler, and energy recovery ventilation.

Low Income Weatherization Assistance Program

This umbrella program seeks to improve energy efficiency for low-income customers in existing residential dwellings. It combines efficiency improvements to the thermal envelope with upgraded electric appliances. The program provides incentives for attic insulation upgrades, duct testing and repair, reduced air infiltration, water heater wrap, HVAC maintenance, high efficiency heat pumps, heat recovery units, and dedicated heat pump water heaters.

Neighborhood Energy Saver Program

The Neighborhood Energy Saver (NES) Program consists of 12 measures including compact fluorescent bulb replacement, water heater wrap and insulation for water pipes, water heater temperature check and adjustment, low-flow faucet aerator, low-flow showerhead, refrigerator coil brush, HVAC filters, and weatherization measures (i.e. weather stripping, door sweeps, etc.). In addition to the installation of new conservation measures, an important component of this program is educating families on energy efficiency techniques and the promotion of behavioral changes to help customers control their energy usage.

Residential Energy Management Program (EnergyWise)

This is a voluntary customer program that allows PEF to reduce peak demand and thus defer generation construction. Peak demand is reduced by interrupting service to selected electrical equipment with radio-controlled switches installed on the customer's premises. These interruptions are at PEF's option, during specified time periods, and coincident with hours of peak demand. Participating customers receive a monthly credit on their electricity bills prorated above 600 kWh per month.

Renewable Energy Program

The Renewable Energy Program is designed to reduce system peak demand and increase renewable energy generation on the PEF grid. The program seeks to meet the following overall goals:

1. Obtain energy and demand reductions that are significant and measurable.
2. Enhance customer/contractor awareness of the capabilities of renewable energy technologies.
3. Educate customer/contractor about additional opportunities to generate and use renewable energy.
4. Develop and offer renewable energy measures to the marketplace.
5. Minimize "lost opportunities" in the renewable energy market.
6. Increase participation in the PEF Load Management program.

The Renewable Energy Program consists of two measures:

- Solar Water Heater with EnergyWise – This measure encourages residential customers to install a solar thermal water heating system. The customer must have whole house electric cooling, electric water heating, and electric heating to be eligible for this program. Pool heaters and photovoltaic systems would not qualify. In order to qualify for this incentive, the heating, air conditioning, and water heating systems must be on the Energy Management Program (EnergyWise) and the solar thermal system must provide a minimum of 50 percent of the water-heating load.
- Solar Photovoltaics with Energy Wise (SolarWise for Schools) – This measure promotes environmental stewardship and renewable energy education through the installation of solar

energy systems at schools within PEF's service territory. Customers participating in the Winter-Only Energy Management or Year-Round Energy Management plan can elect to donate their monthly credit toward the SolarWise for Schools. The program will accumulate associated participant credits in a separate fund for a period of two years, at which time the customer may elect to renew for an additional two years. All proceeds collected from participating customers, and their associated monthly credits, will be used to promote photovoltaics and renewable energy education opportunities.

COMMERCIAL/INDUSTRIAL (C/I) PROGRAMS

Business Energy Check Program

This energy audit program provides commercial and industrial customers with an assessment of the current energy usage at their facilities, recommendations on how they can improve the environmental conditions of their facilities while saving on their electricity bills, and information on low-cost energy efficiency measures. The Business Energy Check consists of a free walk-through audit and a paid walk-through audit. Small business customers also have the option to complete a Business Energy Check online at Progress Energy's website. In most cases, this program is a prerequisite for participation in the other C/I programs.

Better Business Program

This is the umbrella efficiency program for existing commercial and industrial customers. The program provides customers with information, education, and advice on energy-related issues as well as incentives on efficiency measures that are cost-effective to PEF and its customers. The Better Business Program promotes energy efficient heating, ventilation, air conditioning (HVAC), building retrofit measures (in particular, ceiling insulation upgrade, duct leakage test and repair, energy-recovery ventilation, and Energy Star cool roof coating products), demand-control ventilation, efficient compressed air systems, efficient motors, efficient indoor lighting, green roof, occupancy sensors, packaged AC steam cleaning, roof insulation, roof-top unit recommissioning, thermal energy storage, and window film or screen.

Commercial/Industrial New Construction Program

The primary goal of this program is to foster the design and construction of energy efficient buildings. The new construction program: 1) provides education and information to the design community on all aspects of energy efficient building design; 2) requires that the building design, at a minimum, surpass the State of Florida energy code; 3) provides financial incentives for specific energy efficient equipment; and 4) provides energy design awards to building design teams. Incentives will be provided for high efficiency HVAC equipment, energy recovery ventilation, Energy Star cool roof coating products, demand-control ventilation, efficient compressed air systems, efficient motors, efficient indoor lighting, green roof, occupancy sensors, roof insulation, thermal energy storage and window film or screen.

Innovation Incentive Program

This program promotes a reduction in demand and energy by subsidizing energy conservation projects for customers in PEF's service territory. The intent of the program is to encourage legitimate energy efficiency measures that reduce kW demand and or kWh energy, but are not addressed by other programs. Energy efficiency opportunities are identified by PEF representatives during a Business Energy Check audit. If a candidate project meets program specifications, it will be eligible for an incentive payment, subject to PEF approval.

Commercial Energy Management Program (Rate Schedule GSLM-1)

This direct load control program reduces PEF's demand during peak or emergency conditions. As described in PEF's DSM Plan, this program is currently closed to new participants. It is applicable to existing program participants who have electric space cooling equipment suitable for interruptible operation and are eligible for service under the Rate Schedule GS-1, GST-1, GSD-1, or GSDT-1. The program is also applicable to existing participants who have any of the following electrical equipment installed on permanent residential structures and utilized for domestic (household) purposes: 1) water heater(s), 2) central electric heating systems(s), 3) central electric cooling system(s), and or 4) swimming pool pump(s). Customers receive a monthly credit on their bills depending on the type of equipment in the program and the interruption schedule.

Standby Generation Program

This demand control program reduces PEF's demand based upon the indirect control of customer generation equipment. This is a voluntary program available to all commercial, industrial, and agricultural customers who have on-site generation capability of at least 50 kW, and are willing to reduce their PEF demand when PEF deems it necessary. The customers participating in the Standby Generation program receive a monthly credit on their electricity bills according to the demonstrated ability of the customer to reduce demand at PEF's request.

Interruptible Service Program

This direct load control program reduces PEF's demand at times of capacity shortage during peak or emergency conditions. The program is available to qualified non-residential customers with an average billing demand of 500 kW or more, who are willing to have their power interrupted. PEF will have remote control of the circuit breaker or disconnect switch supplying the customer's equipment. In return for this ability to interrupt load, customers participating in the Interruptible Service program receive a monthly interruptible demand credit applied to their electric bills.

Curtailable Service

This direct load control program reduces PEF's demand at times of peak or emergency conditions. The program is available to qualified non-residential customers with an average billing demand of 500 kW or more, who are willing to curtail 25 percent of their average monthly billing demand. Customers participating in the Curtailable Service program receive a monthly curtailable demand credit applied to their electric bills.

RESEARCH AND DEVELOPMENT PROGRAMS

Technology Development Program

The primary purpose of this program is to establish a system to "aggressively pursue research, development and demonstration projects jointly with others as well as individual projects" (Rule 25-17.001(5)(f), Florida Administration Code). In accordance with rule, the Technology Development Program facilitates the research of innovative technologies and the continued advances within the energy industry. PEF will undertake certain development, educational, and

demonstration projects that have potential to become DSM Programs. Examples of such projects include the evaluation of Premise Area Networks (PAN) to provide increasing customer awareness to use energy more efficiently while advancing demand response capabilities. Additional projects include the evaluation of off-peak generation with energy storage for on-peak demand consumption, small-scale wind, and smart charging for Plug-In Hybrid Electric Vehicles. In most cases, each demand reduction and energy efficiency project that is proposed and investigated under this program requires field-testing with customers.

CHAPTER 3

FORECAST OF FACILITIES REQUIREMENTS

Progress Energy

CHAPTER 3

FORECAST OF FACILITIES REQUIREMENTS

RESOURCE PLANNING FORECAST

OVERVIEW OF CURRENT FORECAST

Supply-Side Resources

PEF has a summer total capacity resource of 11,587 MW (see Table 3.1). This capacity resource includes nuclear (789 MW), fossil steam (3,409 MW), combined-cycle plants (3,250 MW), combustion turbines (2,494 MW; 143 MW of which is owned by Georgia Power for the months June through September), utility purchased power (484 MW), independent power purchases (478 MW), and non-utility purchased power (683 MW). Table 3.2 presents PEF's firm capacity contracts with Qualifying Facilities (QF's).

Demand-Side Programs

Total DSM resources are presented in Schedules 3.1 and 3.2 of Chapter 2. These programs include Non-Dispatchable DSM, Interruptible Load, and Dispatchable Load Control resources.

Capacity and Demand Forecast

PEF's forecasts of capacity and demand for the projected summer and winter peaks can been found in Schedules 7.1 and 7.2, respectively. PEF's forecasts of capacity and demand are based on serving expected growth in retail requirements in its regulated service area and meeting commitments to wholesale power customers who have entered into supply contracts with PEF. In its planning process, PEF balances its supply plan for the needs of retail and wholesale customers and endeavors to ensure that cost-effective resources are available to meet the needs across the customer base.

Base Expansion Plan

PEF's planned supply resource additions and changes are shown in Schedule 8 and are referred to as PEF's Base Expansion Plan. This Plan results in a net gain in summer capacity of 1,054 MW. Planned installations of combustion turbine technology in 2018 at an undesignated existing plant location and new nuclear generation at the Company's Levy County site in 2019 are included. These additions depend, in part, on projected load growth, and obtaining all necessary state and federal permits under current schedules. Changes in these or other factors could impact PEF's base expansion plan.

PEF's Base Expansion Plan projects the need for additional units with proposed in-service dates during the ten-year period from 2010 through 2019. These units, together with purchases from Qualifying Facilities (QF), Investor Owned Utilities, and Independent Power Producers help the PEF system meet the energy requirements of its customer base. The capacity needs identified in this plan may be impacted by PEF's ability to extend or replace existing purchase power cogenerator and QF contracts and to secure the new renewable purchased power resources in their respective projected timeframes. Status reports and specifications for the planned new generation facilities are included in Schedule 9. The planned transmission lines associated with the Levy County nuclear generation project are shown in Schedule 10.

TABLE 3.1

PROGRESS ENERGY FLORIDA

TOTAL CAPACITY RESOURCES OF POWER PLANTS AND PURCHASED POWER CONTRACTS

AS OF DECEMBER 31, 2009

PLANTS	NUMBER OF UNITS	SUMMER NET DEPENDABLE CAPABILITY (MW)	
Nuclear Steam			
Crystal River	1	789	*(1)*
Total Nuclear Steam	1	789	
Fossil Steam			
Crystal River	4	2,267	
Anclote	2	1,011	
Suwannee River	3	131	
Total Fossil Steam	9	3,409	
Combined Cycle			
Bartow	1	1,133	
Hines Energy Complex	4	1,912	
Tiger Bay	1	205	
Total Combined cycle	6	3,250	
Combustion Turbine			
DeBary	10	642	
Intercession City	14	980	*(2)*
Bayboro	4	174	
Bartow	4	178	
Suwannee	3	153	
Turner	4	147	
Higgins	4	114	
Avon Park	2	48	
University of Florida	1	46	
Rio Pinar	1	12	
Total Combustion Turbine	47	2,494	
Total Units	**63**		
Total Net Generating Capability		**9,942**	

(1) Adjusted for sale of approximately 8.2% of total capacity

(2) Includes 143 MW owned by Georgia Power Company (Jun-Sep)

Purchased Power			
Qualifying Facility Contracts	13	683	
Investor Owned Utilities	2	484	
Independent Power Producers	1	478	
TOTAL CAPACITY RESOURCES		11,587	

TABLE 3.2

PROGRESS ENERGY FLORIDA

QUALIFYING FACILITY GENERATION CONTRACTS

AS OF DECEMBER 31, 2009

Facility Name	Firm Capacity (MW)
Dade County Resource Recovery	43
El Dorado	114.2
Lake Cogen	110
Lake County Resource Recovery	12.8
LFC Jefferson	8.5
LFC Madison	8.5
Mulberry	115
Orange Cogen (CFR-Biogen)	74
Orlando Cogen	79.2
Pasco County Resource Recovery	23
Pinellas County Resource Recovery 1	40
Pinellas County Resource Recovery 2	14.8
Ridge Generating Station	39.6
TOTAL	**682.6**

PROGRESS ENERGY FLORIDA

SCHEDULE 7.1

FORECAST OF CAPACITY, DEMAND AND SCHEDULED MAINTENANCE

AT TIME OF SUMMER PEAK

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	TOTAL[a] INSTALLED CAPACITY	FIRM[b] CAPACITY IMPORT	FIRM CAPACITY EXPORT	QF	TOTAL CAPACITY AVAILABLE	SYSTEM FIRM SUMMER PEAK DEMAND	RESERVE MARGIN BEFORE MAINTENANCE		SCHEDULED MAINTENANCE	RESERVE MARGIN AFTER MAINTENANCE	
YEAR[c]	MW	MW	MW	MW	MW	MW	MW	% OF PEAK	MW	MW	% OF PEAK
2010	9,800	1,625	0	173	11,598	9,037	2,561	28%	0	2,561	28%
2011	9,800	1,709	0	173	11,682	8,842	2,840	32%	0	2,840	32%
2012	9,951	2,026	0	173	12,150	9,041	3,109	34%	0	3,109	34%
2013	9,951	1,916	0	173	12,040	9,126	2,914	32%	0	2,914	32%
2014	9,951	1,785	0	173	11,909	8,987	2,921	33%	0	2,921	33%
2015	9,951	1,785	0	173	11,909	9,052	2,856	32%	0	2,856	32%
2016	9,820	1,373	0	173	11,368	9,195	2,170	24%	0	2,170	24%
2017	9,820	1,373	0	173	11,366	9,274	2,091	23%	0	2,091	23%
2018	9,998	1,373	0	173	11,543	9,383	2,160	23%	0	2,160	23%
2019	10,896	1,373	0	173	12,441	9,763	2,678	27%	0	2,678	27%

Notes:

a. Total Installed Capacity does not include the 143 MW to Southern Company from Intercession City P11.

b. FIRM Capacity Import includes Cogeneration, Utility and Independent Power Producers, and Short Term Purchase Contracts.

c. These estimates include summer seasonal purchases of approximately 65 and 80 MW in 2015 and 2015 respectively. The deals are not yet consummated as of the time of the Ten-Year Site Plan filing. Since the purchase is expected to be from peaking capacity, no energy impact has been included in the plan at this time.

PROGRESS ENERGY FLORIDA

SCHEDULE 7.2

FORECAST OF CAPACITY, DEMAND AND SCHEDULED MAINTENANCE

AT TIME OF WINTER PEAK

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	TOTAL[a] INSTALLED CAPACITY	FIRM[b] CAPACITY IMPORT	FIRM CAPACITY EXPORT	QF	TOTAL CAPACITY AVAILABLE	SYSTEM FIRM WINTER PEAK DEMAND	RESERVE MARGIN BEFORE MAINTENANCE		SCHEDULED MAINTENANCE	RESERVE MARGIN AFTER MAINTENANCE	
YEAR	MW	MW	MW	MW	MW	MW	MW	% OF PEAK	MW	MW	% OF PEAK
2009/10	10,991	1,514	0	173	12,679	9,753	2,925	30%	0	2,925	30%
2010/11	10,975	1,672	0	173	12,820	9,608	3,212	33%	0	3,212	33%
2011/12	11,126	1,762	0	173	13,061	9,870	3,190	32%	0	3,190	32%
2012/13	11,126	2,109	0	173	13,409	10,050	3,358	33%	0	3,358	33%
2013/14	11,126	1,868	0	173	13,167	9,620	3,547	37%	0	3,547	37%
2014/15	11,126	1,868	0	173	13,167	9,693	3,474	36%	0	3,474	36%
2015/16	11,126	1,868	0	173	13,167	9,746	3,421	35%	0	3,421	35%
2016/17	10,993	1,456	0	173	12,622	9,883	2,739	28%	0	2,739	28%
2017/18	10,993	1,456	0	173	12,622	9,996	2,626	26%	0	2,626	26%
2018/19	11,198	1,456	0	173	12,828	10,133	2,694	27%	0	2,694	27%

Notes:

a. Total Installed Capacity does not include the 143 MW to Southern Company from Intercession City, FL.

b. FIRM Capacity Import includes Cogeneration Utility and Independent Power Producers, and Short Term Purchase Contracts.

PROGRESS ENERGY FLORIDA

SCHEDULE 8
PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

AS OF JANUARY 1, 2010 THROUGH DECEMBER 31, 2019

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
								CONST.	COM'L IN-	EXPECTED	GEN. MAX.	NET CAPABILITY[a]			
	UNIT	LOCATION	UNIT	FUEL		FUEL TRANSPORT		START	SERVICE	RETIREMENT	NAMEPLATE	SUMMER	WINTER		
PLANT NAME	NO.	(COUNTY)	TYPE	PRI.	ALT.	PRI.	ALT.	MO. / YR	MO. / YR	MO. / YR	KW	MW	MW	STATUS[b]	NOTES[c]
CRYSTAL RIVER	4	CITRUS	ST						5/2010			14	14	A	(4)
CRYSTAL RIVER	4	CITRUS	ST						5/2010			(34)	(34)	D	(2)
CRYSTAL RIVER	5	CITRUS	NP						6/2010			4	4	A	(3)
CRYSTAL RIVER	5	CITRUS	NP						12/2011			151	151	A	(3)
SUWANNEE RIVER	1-3	SUWANNEE	ST							d.		(131)	(133)		(1)
UNKNOWN	1	UNKNOWN	CT					06/2016	6/2018			178	205	P	(1)
RIO PINAR	P1	ORANGE	CT							d.		(12)	(13)		(1)
TURNER	P1-P2	VOLUSIA	CT							d.		(26)	(32)		(1)
AVON PARK	P1-P2	HIGHLANDS	CT							d		(48)	(66)		(1)
HIGGINS	P1-P4	PINELLAS	CT							d.		(114)	(128)		(1)
LEVY	1	LEVY	NP	NUC		RR		01/2013	6/2019			1092	1120	P	(1)

a. Net capability of Crystal River 3 represents approximately 91.83% PEF Ownership.
b. See page v. for Code Legend of Future Generating Unit Status.
c. NOTES
(1) Planned, Prospective, or Committed project.
(2) Planned derations due to FGD scrubber installations.
(3) Planned uprates.
(4) Turbine Project.
d. Suwannee 1-3 expect to be shut down by 6/2016. Peakers at Avon Park, Higgins, Rio Pinar, Turner estimated to be in cold stand-by or retired by 6/2019.

PROGRESS ENERGY FLORIDA

SCHEDULE 9
STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES
AS OF JANUARY 1, 2010

(1)	Plant Name and Unit Number:	**Undesignated CT**
(2)	Capacity	
	a. Summer:	177.5
	b. Winter:	205.3
(3)	Technology Type:	COMBUSTION TURBINE
(4)	Anticipated Construction Timing	
	a. Field construction start date:	6/2016
	b. Commercial in-service date:	6/2018 (EXPECTED)
(5)	Fuel	
	a. Primary fuel:	NATURAL GAS
	b. Alternate fuel:	DISTILLATE FUEL OIL
(6)	Air Pollution Control Strategy:	UNKNOWN
(7)	Cooling Method:	UNKNOWN
(8)	Total Site Area:	596 ACRES
(9)	Construction Status:	PLANNED
(10)	Certification Status:	PLANNED
(11)	Status with Federal Agencies:	PLANNED
(12)	Projected Unit Performance Data	
	a. Planned Outage Factor (POF):	3.84 %
	b. Forced Outage Factor (FOF):	2.05 %
	c. Equivalent Availability Factor (EAF):	94.2 %
	d. Resulting Capacity Factor (%):	13.2 %
	e. Average Net Operating Heat Rate (ANOHR):	10,648 BTU/kWh
(13)	Projected Unit Financial Data	
	a. Book Life (Years):	25
	b. Total Installed Cost (In-service year $/kW):	718.41
	c. Direct Construction Cost ($/kW):	527.46
	d. AFUDC Amount ($/kW):	48.98
	e. Escalation ($/kW):	141.97
	f. Fixed O&M ($/kW-yr):	3.84
	g. Variable O&M ($/MWh):	12.98
	h. K Factor:	NO CALCULATION

PROGRESS ENERGY FLORIDA

SCHEDULE 9
STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES
AS OF JANUARY 1, 2010

(1)	Plant Name and Unit Number:	**Levy County Unit No. 1**
(2)	Capacity	
	a. Summer:	1,092
	b. Winter:	1,120
(3)	Technology Type:	ADVANCED LIGHT WATER NUCLEAR
(4)	Anticipated Construction Timing	
	a. Field construction start date:	1/2013
	b. Commercial in-service date:	6/2019 (EXPECTED)
(5)	Fuel	
	a. Primary fuel:	URANIUM
	b. Alternate fuel:	--
(6)	Air Pollution Control Strategy:	N/A
(7)	Cooling Method:	COOLING TOWER
(8)	Total Site Area:	3,100 ACRES
(9)	Construction Status:	PLANNED
(10)	Certification Status:	PLANNED
(11)	Status with Federal Agencies:	PLANNED
(12)	Projected Unit Performance Data	
	a. Planned Outage Factor (POF):	5.1 %
	b. Forced Outage Factor (FOF):	3.0 %
	c. Equivalent Availability Factor (EAF):	92.0 %
	d. Resulting Capacity Factor (%):	91.5 %
	e. Average Net Operating Heat Rate (ANOHR):	9,715 BTU/kWh
(13)	Projected Unit Financial Data	
	a. Book Life (Years):	40
	b. Total Installed Cost (In-service year $/kW)[2]:	6,784
	c. Direct Construction Cost ($/kW)[2]:	5,759
	d. AFUDC Amount ($/kW): [1]	(Note 1)
	e. Escalation ($/kW)[2]:	1,025
	f. Fixed O&M ($/kW-yr):	61.57
	g. Variable O&M ($/MWh):	3.09
	h. K Factor:	NO CALCULATION

[1] Carrying costs per F.S. 366.93 and Rule 25-6.0423, F.A.C.

[2] These estimates are under review.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Levy - Central Florida South Substation
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	Existing and new transmission line rights-of-way
(4) LINE LENGTH:	50 miles
(5) VOLTAGE:	500 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$150,000,000 *
(8) SUBSTATIONS:	Levy, Central Florida South
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Levy - Crystal River Substation
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	New transmission line right-of-way
(4) LINE LENGTH:	10 miles
(5) VOLTAGE:	500 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$30,000,000 *
(8) SUBSTATIONS:	Levy
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Levy - Citrus Substation
(2) NUMBER OF LINES:	2
(3) RIGHT-OF-WAY:	New transmission line right-of-way
(4) LINE LENGTH:	10 miles
(5) VOLTAGE:	500 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$50,000,000 *
(8) SUBSTATIONS:	Levy
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Crystal River - Brookridge Substation
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	Existing and new transmission line rights-of-way
(4) LINE LENGTH:	35 miles
(5) VOLTAGE:	230 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$70,000,000 *
(8) SUBSTATIONS:	N/A
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Brookridge - Brooksville West Substation
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	Existing and new transmission line rights-of-way
(4) LINE LENGTH:	4 miles
(5) VOLTAGE:	230 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$8,000,000 *
(8) SUBSTATIONS:	N/A
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

PROGRESS ENERGY FLORIDA

SCHEDULE 10
STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES

LEVY COUNTY NUCLEAR POWER PLANT

(1) POINT OF ORIGIN AND TERMINATION:	Kathleen - Lake Tarpon Substation
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	Existing and new transmission line rights-of-way
(4) LINE LENGTH:	45 miles
(5) VOLTAGE:	230 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	6/2019
(7) ANTICIPATED CAPITAL INVESTMENT:	$100,000,000 *
(8) SUBSTATIONS:	N/A
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Each of these projects is part of one or more transmission options for the Levy Nuclear project. Out of several options under consideration, the final option is yet to be chosen, and thus this list of projects is subject to change. In addition, the projected capital estimate for this project may vary during construction of the Levy Units.

INTEGRATED RESOURCE PLANNING OVERVIEW

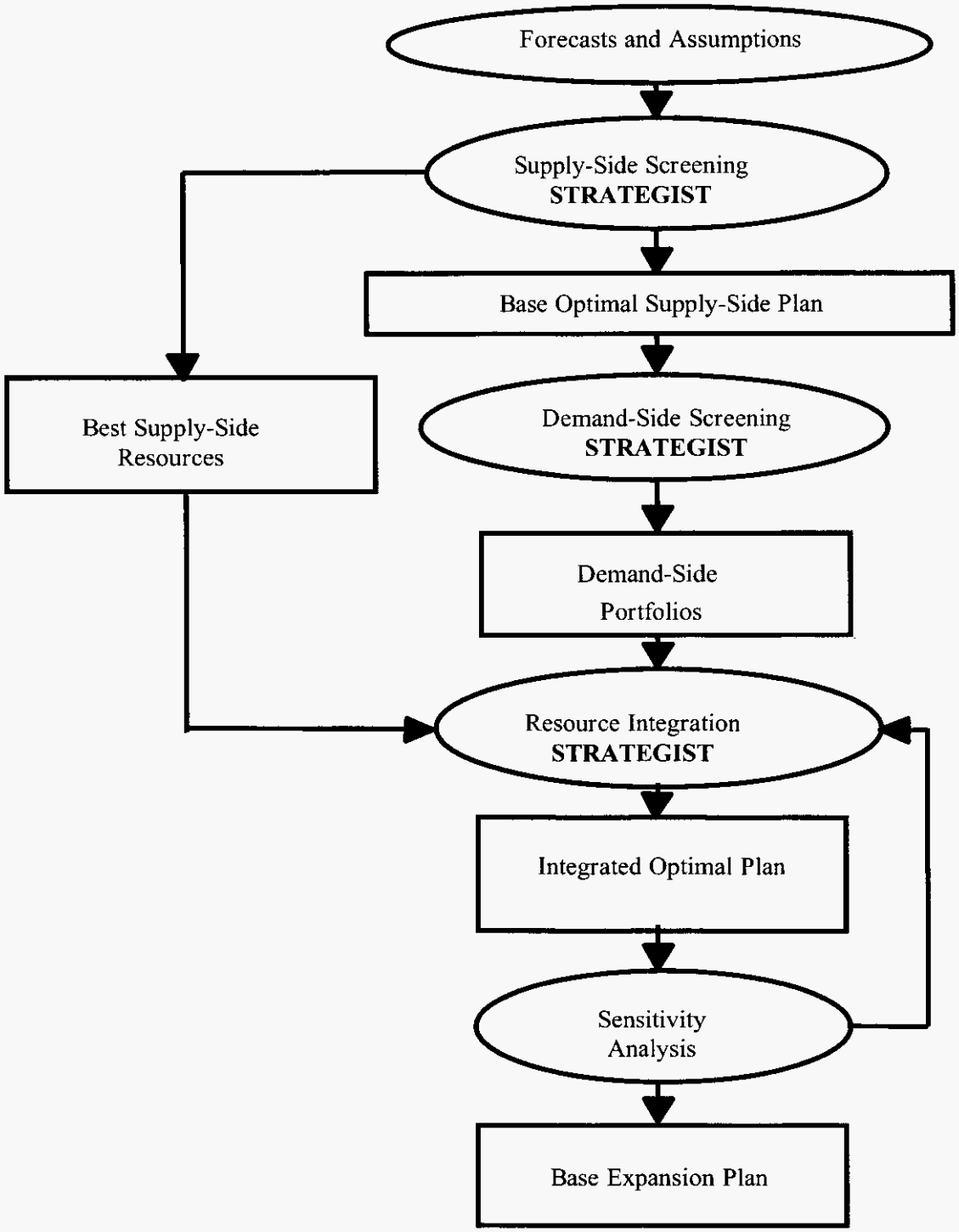
PEF employs an Integrated Resource Planning (IRP) process to determine the most cost-effective mix of supply- and demand-side alternatives that will reliably satisfy our customers' future demand and energy needs. PEF's IRP process incorporates state-of-the-art computer models used to evaluate a wide range of future generation alternatives and cost-effective conservation and dispatchable demand-side management programs on a consistent and integrated basis.

An overview of PEF's IRP Process is shown in Figure 3.1. The process begins with the development of various forecasts, including demand and energy, fuel prices, and economic assumptions. Future supply- and demand-side resource alternatives are identified and extensive cost and operating data are collected to enable these to be modeled in detail. These alternatives are optimized together to determine the most cost-effective plan for PEF to pursue over the next ten years to meet the Company's reliability criteria. The resulting ten-year plan, the Integrated Optimal Plan, is then tested under different relevant sensitivity scenarios to identify variances, if any, which would warrant reconsideration of any of the base plan assumptions. If the plan is judged robust and works within the corporate framework, it evolves as the Base Expansion Plan. This process is discussed in more detail in the following section titled "The Integrated Resource Planning (IRP) Process".

The IRP provides PEF with substantial guidance in assessing and optimizing the Company's overall resource mix on both the supply side and the demand side. When a decision supporting a significant resource commitment is being developed (e.g. plant construction, power purchase, DSM program implementation), the Company will move forward with directional guidance from the IRP and delve much further into the specific levels of examination required. This more detailed assessment will typically address very specific technical requirements and cost estimates, detailed corporate financial considerations, and the most current dynamics of the business and regulatory environments.

FIGURE 3.1

Integrated Resource Planning (IRP) Process Overview



THE INTEGRATED RESOURCE PLANNING (IRP) PROCESS

Forecasts and Assumptions

The evaluation of possible supply- and demand-side alternatives, and development of the optimal plan, is an integral part of the IRP process. These steps together comprise the integration process that begins with the development of forecasts and collection of input data. Base forecasts that reflect PEF's view of the most likely future scenarios are developed, along with high and low forecasts that reflect alternative future scenarios. Computer models used in the process are brought up-to-date to reflect this data, along with the latest operating parameters and maintenance schedules for PEF's existing generating units. This establishes a consistent starting point for all further analysis.

Reliability Criteria

Utilities require a margin of generating capacity above the firm demands of their customers in order to provide reliable service. Periodic scheduled outages are required to perform maintenance and inspections of generating plant equipment and to refuel nuclear plants. At any given time during the year, some capacity may be out of service due to unanticipated equipment failures resulting in forced outages of generation units. Adequate reserve capacity must be available to accommodate these outages and to compensate for higher than projected peak demand due to forecast uncertainty and abnormal weather. In addition, some capacity must be available for operating reserves to maintain the balance between supply and demand on a moment-to-moment basis.

PEF plans its resources in a manner consistent with utility industry planning practices, and employs both deterministic and probabilistic reliability criteria in the resource planning process. A Reserve Margin criterion is used as a deterministic measure of PEF's ability to meet its forecasted seasonal peak load with firm capacity. PEF plans its resources to satisfy a 20 percent Reserve Margin criterion.

Loss of Load Probability (LOLP) is a probabilistic criterion that measures the probability that a company will be unable to meet its load throughout the year. While Reserve Margin considers the peak load and amount of installed resources, LOLP takes into account generating unit sizes, capacity mix, maintenance scheduling, unit availabilities, and capacity assistance available from other utilities. A standard probabilistic reliability threshold commonly used in the electric utility

industry, and the criterion employed by PEF, is a maximum of one day in ten years loss of load probability.

PEF has based its resource planning on the use of dual reliability criteria since the early 1990s, a practice that has been accepted by the FPSC. PEF's resource portfolio is designed to satisfy the 20percent Reserve Margin requirement and probabilistic analyses are periodically conducted to ensure that the one day in ten years LOLP criterion is also satisfied. By using both the Reserve Margin and LOLP planning criteria, PEF's resource portfolio is designed to have sufficient capacity available to meet customer peak demand, and to provide reliable generation service under expected load conditions. PEF has found that resource additions are typically triggered to meet the 20 percent Reserve Margin thresholds before LOLP becomes a factor.

Supply-Side Screening

Potential supply-side resources are screened to determine those that are the most cost-effective. Data used for the screening analysis is compiled from various industry sources and PEF's experiences. The wide range of resource options is pre-screened to set aside those that do not warrant a detailed cost-effectiveness analysis. Typical screening criteria are costs, fuel source, technology maturity, environmental parameters (e.g. possible climate legislation), and overall resource feasibility.

Economic evaluation of generation alternatives is performed using the Strategist® optimization program. This optimization tool evaluates revenue requirements for specific resource plans generated from multiple combinations of future resource additions that meet system reliability criteria and other system constraints. All resource plans are then ranked by system revenue requirements.

Demand-Side Screening

Like supply-side resources, data for large numbers of potential demand-side resources are also collected. These resources are pre-screened to eliminate those alternatives that are still in research and development, addressed by other regulations (e.g. building code), or not applicable to PEF's customers. Strategist® is updated with cost data and load impact parameters for each potential DSM measure to be evaluated.

The Base Optimal Supply-Side Plan is used to establish avoidable units for screening future demand-side resources. Each future demand-side alternative is individually tested in this plan over the ten-year planning horizon to determine the benefit or detriment that the addition of this demand-side resource provides to the overall system. Strategist® calculates the benefits and costs for each demand-side measure evaluated and reports the appropriate ratios for the Rate Impact Measure (RIM), the Total Resource Cost Test (TRC), and the Participant Test.

Resource Integration and the Integrated Optimal Plan

The cost-effective generation alternatives and the demand-side portfolios developed in the screening process can then be optimized together to formulate integrated optimal plans. The optimization program considers all possible future combinations of supply- and demand-side alternatives that meet the Company's reliability criteria in each year of the ten-year study period and reports those that provide both flexibility and low revenue requirements (rates) for PEF's ratepayers.

Developing the Base Expansion Plan

The integrated optimized plan that provides the lowest revenue requirements may then be further tested using sensitivity analysis. The economics of the plan may be evaluated under high and low forecast scenarios for fuel, load and financial assumptions, or any other sensitivities which the planner deems relevant. From the sensitivity assessment, the plan that is identified as achieving the best balance of flexibility and cost is then reviewed within the corporate framework to determine how the plan potentially impacts or is impacted by many other factors. If the plan is judged robust under this review, it would then be considered the Base Expansion Plan.

KEY CORPORATE FORECASTS

Load Forecast

The assumptions and methodology used to develop the base case load and energy forecast are described in Chapter 2 of this TYSP.

Fuel Forecast

The base case fuel price forecast was developed using short-term and long-term spot market price projections from industry-recognized sources. Coal prices are expected to be relatively stable

month-to-month; however, oil and natural gas prices are expected to be more volatile on a day-to-day and month-to-month basis.

In the short term, the base cost for coal is based on the existing contracts and spot market coal prices and transportation arrangements between PEF and its various suppliers. For the longer term, the prices are based on spot market forecasts reflective of expected market conditions. Oil and natural gas prices are estimated based on current and expected contracts and spot purchase arrangements as well as near-term and long-term market forecasts. Oil and natural gas commodity prices are driven primarily by open market forces of supply and demand. Natural gas firm transportation cost is determined primarily by pipeline tariff rates and tends to change less frequently than commodity prices.

Financial Forecast

The key financial assumptions used in PEF's most recent planning studies were 50 percent debt and 50 percent equity capital structure, projected cost of debt of 5.83 percent, and an equity return of 12.54 percent. The assumptions resulted on a weighted average cost of capital of 9.2 percent and an after-tax discount rate of 8.1 percent.

TEN-YEAR SITE PLAN (TYSP) RESOURCE ADDITIONS

In this TYSP, PEF's supply-side resources include the repowering of the P.L. Bartow Plant with F-Class combined-cycle technology which was brought on-line in summer 2009. The planned units in this TYSP include the installation of combustion turbine technology at a location that has not yet been chosen, as well as nuclear generation technology at a greenfield site in Levy County.

In 2008, the FPSC approved PEF's petition for a Determination of Need for the two nuclear units in Levy County. The Company selected Levy Unit 1 for projected commercial service in 2019, to meet its generation capacity needs in the period 2019 and beyond after carefully evaluating planning options through the Company's on-going IRP process outlined herein. Nuclear generation was identified as the most cost-effective option to meet the need, taking into account the need to improve fuel diversity, reduce Florida's dependence on fuel oil and natural gas, reduce current and potential future air emission compliance costs, and contribute to the long-term

stability of the electric grid. Since nuclear generation units involve very long licensing and construction lead times, PEF plans to continue with the design and development of the infrastructure and transmission requirements, negotiations for procurement and construction contracts and permitting and licensing to support the current planned in-service dates. However changes in factors such as the projected load growth and the timeline to obtain all the necessary state and federal permits could impact PEF's base expansion plan.

Through its ongoing planning process, PEF will continue to evaluate the timetables for all projected resource additions and assess alternatives for the future considering, among other things, projected load growth, fuel prices, and lead times in the construction marketplace, project development timelines for new fuels, and technologies, and environmental compliance considerations. The Company will continue to examine the merits of new generation alternatives and adjust its resource plans accordingly to ensure optimal selection of resource additions based on the best information available.

RENEWABLE ENERGY

PEF continues to make purchases from the following facilities listed by fuel type:

Municipal Solid Waste Facilities:

Lake County Resource Recovery (12.8 MW)

Metro-Dade County Resource Recovery (43 MW)

Pasco County Resource Recovery (23 MW)

Pinellas County Resource Recovery (54.8 MW)

Waste Heat from Exothermic Processes:

PCS Phosphate (As Available)

Waste Wood, Tires, and Landfill Gas:

Ridge Generating Station (39.6 MW)

Photovoltaics

Various customer and PEF owned installations (approximately 930 kW)

PEF's Net Metering Tariff includes over 2 MW of roof-top solar PV

In addition, PEF has contracts with BG&E (120 MW), Vision Power (40 MW), Horizon Energy (up to 60 MW) and FB Energy (60 MW). One BG&E facility, the Vision Power facility, and the

FB Energy facility will utilize an energy crop, the second BG&E unit will utilize wood products, and Horizon Energy will gasify municipal solid waste.

PEF continues to seek out renewable suppliers that can provide reliable capacity and energy at economic rates. PEF continues to keep an open Request for Renewables (RFR) soliciting proposals for renewable energy projects. PEF's open RFR continues to receive interest and to date has logged over 190 responses. PEF will continue to submit renewable contracts in compliance with FPSC rules.

PLAN CONSIDERATIONS

Load Forecast

In general, higher-than-projected load growth would shift the need for new capacity to an earlier year and lower-than-projected load growth would delay the need for new resources. PEF's TYSP includes additions of combustion turbine and nuclear units in the long term. The Company's resource plan provides the flexibility to shift certain resources to earlier or later in-service dates should a significant change in projected customer demand begin to materialize.

Fuel Forecast

PEF's current TYSP includes new natural gas fueled resources in 2018. The plan also includes uprates to the Crystal River nuclear unit No. 3 in 2010 and 2011, and a new nuclear unit in 2019. Higher gas prices would improve the economics for non gas-fueled resources and lower gas prices would benefit gas-fueled resources. Uncertainty over future environmental regulation, particularly as it relates to carbon, as well as fuel security and reliability considerations, favors pursuit of the nuclear option.

Financial Forecast

PEF's current TYSP includes a combustion turbine in 2018 and a nuclear unit addition in 2019. Lower cost of capital and escalation rates would favor options with longer construction lead times and higher capital costs such as the nuclear addition. However, PEF does not expect these assumptions to go much lower than the current base case forecast and nuclear generation is not projected to be feasible before 2019. PEF will continue to assess the economics of future generation alternatives including consideration of the uncertainties in planning assumptions.

TRANSMISSION PLANNING

PEF's transmission planning assessment practices are developed to test the ability of the planned system to meet the reliability criteria as outlined in the FERC Form 715 filing, and to assure the system meets PEF, Florida Reliability Coordinating Council, Inc. (FRCC), and NERC criteria. This involves the use of load flow and transient stability programs to model various contingency situations that may occur, and determining if the system response meets the reliability criteria. In general, this involves running simulations for the loss of any single line, generator, or transformer. PEF normally runs this analysis for system peak and off-peak load levels for possible contingencies, and for both summer and winter. Additional studies are performed to determine the system response to credible, but less probable criteria. These studies include the loss of multiple generators or lines, combinations of each, and some load loss is permissible under these more severe disturbances. These credible, but less probable scenarios are also evaluated at various load levels, since some of the more severe situations occur at average or minimum load conditions. In particular, critical fault clearing times are typically the shortest (most severe) at minimum load conditions, with just a few large base load units supplying the system needs.

As noted in the PEF reliability criteria, some remedial actions are allowed to reduce system loadings, in particular, sectionalizing is allowed to reduce loading on lower voltage lines for bulk system contingencies, but the risk to load on the sectionalized system must be reasonable (it would not be considered prudent to operate for long periods with a sectionalized system). In addition, the number of remedial action steps and the overall complexity of the scheme are evaluated to determine overall acceptability.

Presently, PEF uses the following reference documents to calculate Available Transfer Capability (ATC) for required transmission path postings on the Florida Open Access Same-Time Information System (OASIS):

- FRCC: FRCC ATC Calculation and Coordination Procedures, April 4, 2006, which can be found on the FRCC's website: https://www.frcc.com/ATCWG/Shared%20Documents/FRCC%20ATC%20Coordination%20Procedures.pdf

- NERC: Transmission Transfer Capability, May 1, 1995,

- NERC: Available Transfer Capability – Definitions and Determination, July 30, 1996.

PEF uses the FRCC Capacity Benefit Margin (CBM) methodology to assess its CBM needs. This methodology is summarized as follows:

> "FRCC Transmission Providers make an assessment of the CBM needed on their respective systems by using either deterministic or probabilistic generation reliability analysis. The appropriate amount of transmission interface capability is then reserved for CBM on a per interface basis, taking into account the amount of generation available on other interconnected systems, the respective load peaking diversities of those systems, and Transmission Reliability Margin (TRM). Operating reserves may be included if appropriate in TRM and subsequently subtracted from the CBM if needed."

PEF currently has zero CBM reserved on each of its interfaces (posted paths). PEF's CBM on each path is currently established through the transmission provider functions within PEF using deterministic and probabilistic generation reliability analysis.

Currently, PEF proposes several bulk transmission additions that must be certified under either the Florida Transmission Line Siting Act (TLSA) or the Power Plant Siting Act (PPSA). PEF proposed bulk transmission line additions are summarized in the following Table 3.3. PEF has listed only the larger transmission projects. These projects may change depending upon the outcome of PEF's final corridor and specific route selection process.

CHAPTER 4

ENVIRONMENTAL AND LAND USE INFORMATION

Progress Energy

CHAPTER 4
ENVIRONMENTAL AND LAND USE INFORMATION

PREFERRED SITES

PEF's base expansion plan includes the potential installation of combustion turbine technology at an undesignated existing location, and the installation of a nuclear power unit at the Levy County greenfield site. PEF continues to evaluate available options for future supply alternatives. Appropriate permitting requirements for PEF's preferred site are discussed in the following site description.

LEVY COUNTY NUCLEAR POWER PLANT – LEVY COUNTY

PEF recently named a site in southern Levy County as the preferred location for construction of new generation. In this TYSP, the Company is planning the construction of nuclear generation at this plant site with planned operation to begin in 2019.

The Levy County site (see Figure 4.1) is approximately 3,100 acres and located eight miles inland from the Gulf of Mexico and roughly ten miles north of the existing PEF Crystal River Energy Complex.

The site is about 2.5 miles from the Cross Florida Barge Canal, from which the Levy units may draw their makeup water to supply the on-site cooling water system. The Levy County Plant, together with the necessary associated site facilities, will occupy approximately ten percent of the 3,100 acre site and the remaining acreage will be preserved as an exclusionary boundary around the developed plant site and a buffer preserve. PEF purchased an additional 2,100 acre tract contiguous with the southern boundary of the Levy site that secures access to a water supply for the site from the Cross Florida Barge Canal as well as transmission corridors from the plant site. The property for many years had been used for silviculture and was designated as Forestry/Rural Residential. The surrounding area land use is predominantly vacant, commercial forestry lands.

This site was chosen based on several considerations including availability of land and water resources, access to the electric transmission system, and environmental considerations. First, the Levy County site had access to an adequate water supply. Second, the site is at a relatively high elevation, which provides additional protection from wind damage and flooding. Third, unlike a number of other sites considered, the Levy site has more favorable geotechnical qualities, which are critical to siting a nuclear power plant. Fourth, the Levy site provides geographical separation from other electrical generating facilities. Even though the Crystal River Energy Complex site has many favorable qualities, adding new nuclear generating capacity to the Crystal River Energy Complex at this time would result in a significant concentration of PEF's generating assets in one geographical location. This increases the likelihood of a significant generation loss from a single event and a potential large-scale impact on the PEF system. The Levy County location also would assist in avoiding a potential loss from a single significant transmission system event that might result in a large-scale impact on the PEF system.

PEF's assessment of the Levy County site addressed whether any threatened and endangered species or archeological and cultural resources would be adversely impacted by the development of the site for nuclear generation units and related facilities. No significant issues were identified in PEF's evaluations of the property.

The proximity of the Levy County site to the PEF's existing Crystal River Unit 3 nuclear plant provides opportunities for efficiencies in shared support functions. The Levy unit will be located on a greenfield site where site and transmission infrastructure must be constructed along with the buildings necessary for the power units. The site will include cooling towers, intake and discharge structures, containment buildings, auxiliary buildings, turbine buildings, diesel generators, warehouses, related site work and infrastructure, including roads, transmission lines, and a transmission substation. The Company submitted a Site Certification Application (SCA) to the Florida Department of Environmental Protection (FDEP) on June 2, 2008 for the entire site, including plants and associated facilities for the units. Site certification hearings were completed in March 2009, and the Siting Board approved the final certification in August 2009.

Nuclear power is a clean source of electric power generation. Electric power generation from nuclear fuel produces no sulfur dioxide (SO_2), nitrogen oxide (NO_x), green house gases (GHG), or other emissions. Therefore, it will have a positive effect on the surrounding air quality.

Water discharged from nuclear plants must meet federal Clean Water Act requirements and state water-quality standards. Before operating, a nuclear plant's licensing process requires an environmental impact statement that carefully examines and resolves all potential impacts to water quality from the operation of the plant. These issues include concerns about the discharge of waste water and the impacts on aquatic life in cooling water used by the plant.

Transmission modifications will be required to accommodate the Levy County Nuclear Power Plant.

FIGURE 4.1.a.

Levy County Nuclear Power Plant (Levy County)

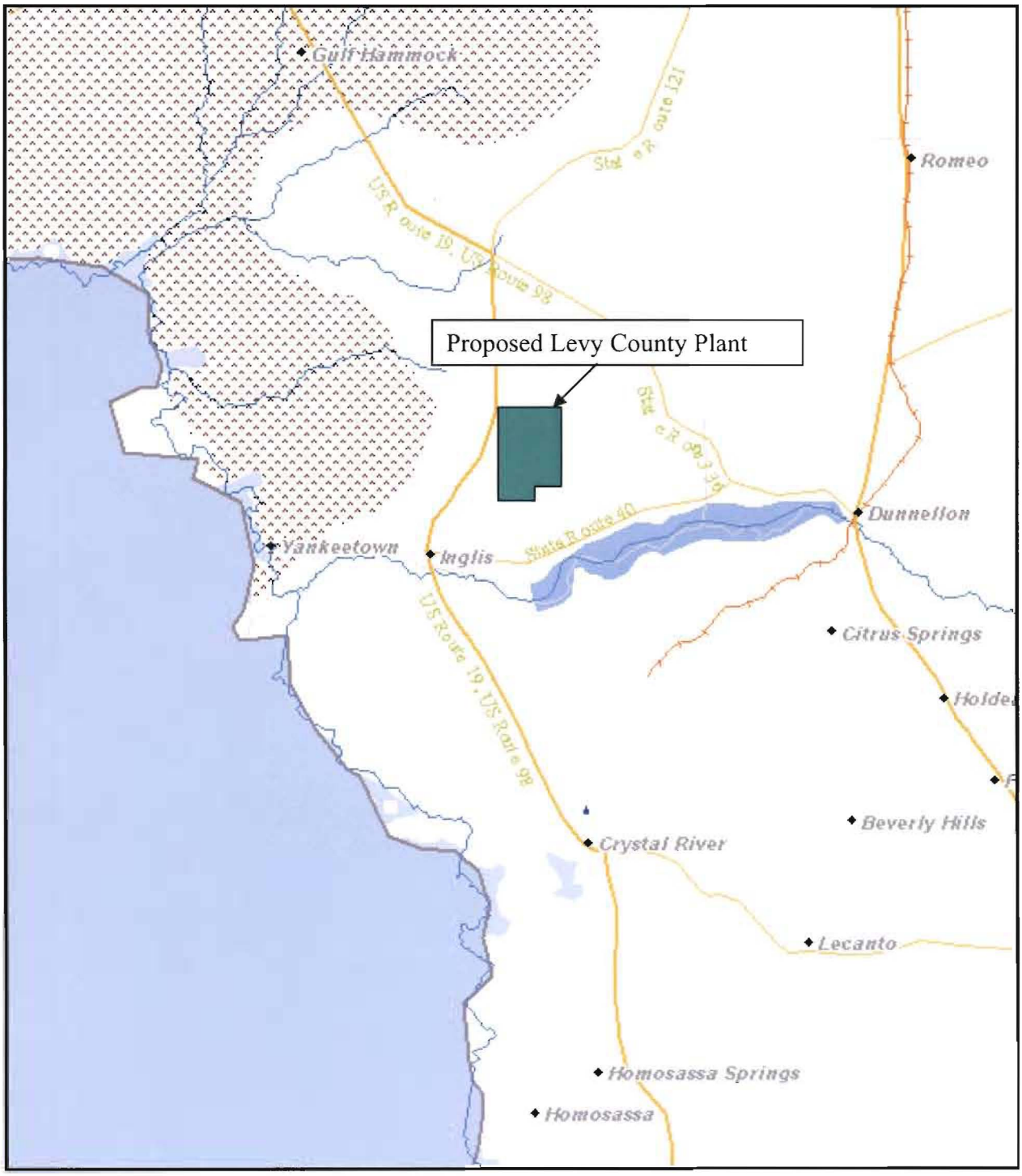


FIGURE 4.1.b.

Levy County Nuclear Power Plant (Levy County) – Aerial View