Progress Energy

March 31, 2011

110000-OT

VIA HAND DELIVERY

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

Re: Ten-Year Site Plan as of December 31, 2010

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 2011 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

JTB:at
Enclosures

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

Progress Energy Service Company, LLC
P.O. Box 14042
St. Petersburg, FL 33733

DOCUMENT NUMBER-DATE
02134 APR-1 =
FPSC-COMMISSION CLERK

Progress Energy Florida, Inc.
Ten-Year Site Plan

April 2011

2011-2020

Submitted to:
Florida Public Service Commission

Progress Energy

DOCUMENT NUMBER-DATE
02134 APR-1 =
FPSC-COMMISSION CLERK

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 doing business as (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. Demand-Side Management (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

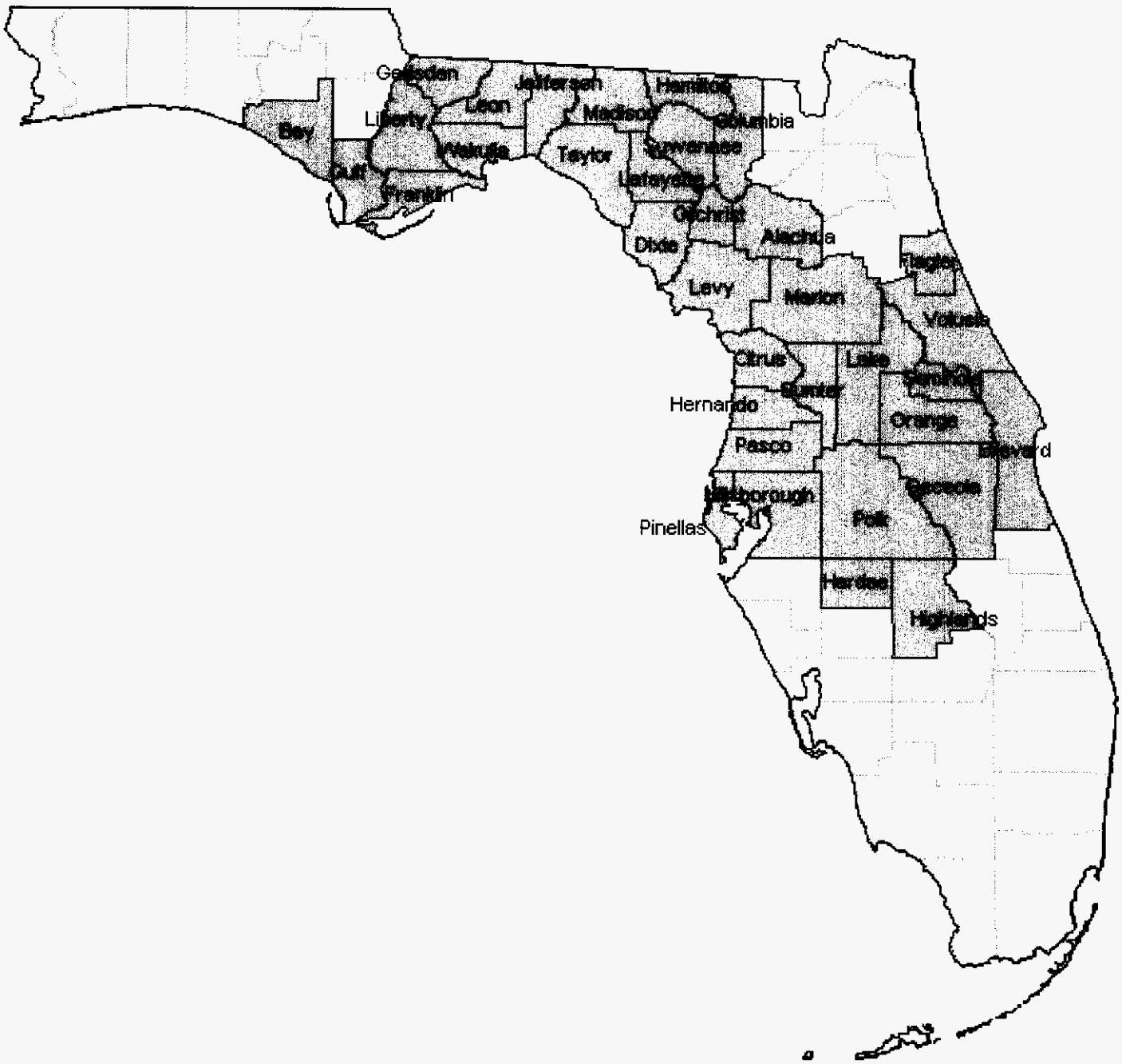
The Company's residential Energy Management program represents a demand response type of program where participating customers help manage future growth and costs. Approximately 397,000 customers participated in the residential Energy Management program at the end of

2010, contributing about 661 MW of winter peak-shaving capacity for use during high load periods. PEF's currently approved DSM programs consist of six residential programs, eight commercial and industrial programs, one research and development program and six solar pilot programs.

TOTAL CAPACITY RESOURCE

As of December 31, 2010, PEF had total summer capacity resources of 11,753 MW consisting of installed capacity of 9,954 MW (excluding Crystal River Unit 3 joint ownership) and 1,799 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



SCHEDULE I
EXISTING GENERATING FACILITIES

AS OF DECEMBER 31, 2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
									COM'L IN-	EXPECTED	GEN. MAX.	NET CAPABILITY	
	UNIT	LOCATION	UNIT	FUEL		FUEL TRANSPORT		ALT. FUEL	SERVICE	RETIREMENT	NAMEPLATE	SUMMER	WINTER
PLANT NAME	NO.	(COUNTY)	TYPE	PRI.	ALT.	PRI.	ALT.	DAYS USE	MO./YEAR	MO./YEAR	KW	MW	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	712	712
CRYSTAL RIVER	5	CITRUS	ST	BIT		WA	RR		10/84		739,260	710	712
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	73
												4,222	**4,288**
COMBINED-CYCLE													
BARTOW	4	PINELLAS	CC	NG	DFO	PL	TK		6/09		1,253,000	1,133	1,260
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		610,000	472	544
TIGER BAY	1	POLK	CC	NG		PL			8/97		278,100	205	227
												3,250	**3,686**
COMBUSTION TURBINE													
AVON PARK	P1	HIGHLANDS	GT	NG	DFO	PL	TK	3***	12/68		33,790	24	34
AVON PARK	P2	HIGHLANDS	GT	DFO		TK			12/68		33,790	24	35
BARTOW	P1, P3	PINELLAS	GT	DFO		WA			5/72, 6/72		111,400	85	112
BARTOW	P2	PINELLAS	GT	NG	DFO	PL	WA	8	6/72		55,700	43	57
BARTOW	P4	PINELLAS	GT	NG	DFO	PL	WA	8	6/72		55,700	49	61
BAYBORO	P1-P4	PINELLAS	GT	DFO		WA			4/73		226,800	174	233
DEBARY	P1-P6	VOLUSIA	GT	DFO		TK			12/75-4/76		401,220	308	389
DEBARY	P7-P9	VOLUSIA	GT	NG	DFO	PL	TK	8	10/92		345,000	247	287
DEBARY	P10	VOLUSIA	GT	DFO		TK			10/92		115,000	82	97
HIGGINS	P1-P2	PINELLAS	GT	NG	DFO	PL	TK		3/69, 4/69		67,580	50	50
HIGGINS	P3-P4	PINELLAS	GT	NG	DFO	PL	TK	1	12/70, 1/71		85,850	63	71
INTERCESSION CITY	P1-P6	OSCEOLA	GT	DFO		PL,TK			5/74		340,200	282	370
INTERCESSION CITY	P7-P10	OSCEOLA	GT	NG	DFO	PL	PL,TK	5	10/93		460,000	328	379
INTERCESSION CITY	P11 **	OSCEOLA	GT	DFO		PL,TK			1/97		165,000	143	161
INTERCESSION CITY	P12-P14	OSCEOLA	GT	NG	DFO	PL	PL,TK	5	12/00		345,000	229	278
RIO PINAR	P1	ORANGE	GT	DFO		TK			11/70		19,290	12	15
SUWANNEE RIVER	P1, P3	SUWANNEE	GT	NG	DFO	PL	TK	9****	10/80, 11/80		122,400	103	134
SUWANNEE RIVER	P2	SUWANNEE	GT	DFO		TK			10/80		61,200	51	66
TURNER	P1-P2	VOLUSIA	GT	DFO		TK			10/70		38,580	20	26
TURNER	P3	VOLUSIA	GT	DFO		TK			8/74		71,200	59	77
TURNER	P4	VOLUSIA	GT	DFO		TK			8/74		71,200	60	78
UNIV. OF FLA.	P1	ALACHUA	GT	NG		PL			1/94		43,000	46	47
												2,482	**3,057**
TOTAL RESOURCES (MW)												**9,954**	**11,031**

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

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

*** 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

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 1.5 percent between 2011 and 2020, which is slightly more than the ten-year historical average of 1.4 percent. County population growth rate projections from the University of Florida's Bureau of Economic and Business Research (BEBR) were incorporated into this projection. The severe housing crisis witnessed both nationwide and in Florida since 2007 has dampened the PEF historical ten-year growth rate significantly as total customer growth turned negative for a twenty-one month period during 2008, 2009 and 2010. Economic conditions going forward look more amenable to improved customer growth due to lower housing prices, improved housing affordability and a large retiring baby-boomer population.

Net energy for load (NEL), which had grown at an average of 1.3 percent between 2001 and 2010, is expected to continue to grow at 1.6 percent per year from 2011 to 2020. The slight improvement in growth in the projected period comes from improved retail and wholesale jurisdictions which were both weakened by the recession. Going forward, projected NEL growth continues to reflect aggressive DSM energy savings targets.

Summer net firm demand is expected to grow at an average of 0.8 percent per year during the next ten years. This is lower than the 1.6 percent growth rate experienced throughout the last ten years. Factors behind the slower projected growth include a return to a normal weather summer peak, negative wholesale summer peak growth from the 2010 MW level, and higher DSM demand savings during the projected period holding 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 1.7 percent average annual growth rate experienced throughout the last ten-year period. The reasons for the slower growth going forward include the return to normal weather (summer 2001 was mild and 2010 was extreme) and aggressive DSM MW savings targets.

ENERGY CONSUMPTION AND DEMAND FORECAST SCHEDULES

The below schedules have been provided on the following pages:

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
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	3,580,767	2.467	20,524	1,451,466	14,140	11,896	161,674	73,579
				1.45%				
2011	3,584,751	2.467	18,376	1,453,081	12,646	11,475	162,399	70,659
2012	3,627,077	2.467	18,156	1,470,238	12,349	11,883	165,166	71,946
2013	3,680,512	2.467	18,450	1,491,898	12,367	12,364	168,555	73,353
2014	3,738,198	2.467	18,467	1,515,281	12,187	12,642	171,886	73,549
2015	3,797,078	2.467	18,547	1,539,148	12,050	12,879	175,179	73,519
2016	3,854,668	2.467	18,840	1,562,492	12,058	13,130	178,395	73,601
2017	3,910,804	2.467	18,987	1,585,247	11,977	13,374	181,529	73,674
2018	3,965,934	2.467	19,176	1,607,594	11,928	13,627	184,608	73,816
2019	4,020,487	2.467	19,351	1,629,707	11,874	13,877	187,651	73,951
2020	4,074,897	2.467	19,539	1,651,762	11,829	14,128	190,684	74,091

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
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	3,219	2,481	1,297,461	0	26	3,260	38,925
2011	3,345	2,450	1,365,306	0	25	3,249	36,470
2012	3,623	2,450	1,478,776	0	25	3,329	37,016
2013	4,052	2,450	1,653,878	0	25	3,450	38,341
2014	3,984	2,450	1,626,122	0	24	3,525	38,642
2015	3,921	2,450	1,600,408	0	24	3,636	39,007
2016	3,679	2,450	1,501,633	0	23	3,739	39,411
2017	3,658	2,450	1,493,061	0	23	3,818	39,860
2018	3,643	2,450	1,486,939	0	23	3,908	40,377
2019	3,621	2,450	1,477,959	0	23	3,981	40,853
2020	3,607	2,450	1,472,245	0	23	4,069	41,366

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
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	3,493	3,742	46,160	25,212	1,640,833
2011	3,560	2,017	42,047	24,912	1,642,842
2012	4,483	2,754	44,253	25,169	1,663,023
2013	4,582	2,714	45,637	25,646	1,688,549
2014	4,968	2,757	46,367	26,194	1,715,811
2015	5,041	2,746	46,794	26,754	1,743,531
2016	4,126	2,639	46,176	27,303	1,770,640
2017	3,475	2,793	46,128	27,836	1,797,062
2018	3,468	2,829	46,674	28,362	1,823,014
2019	4,049	2,912	47,814	28,882	1,848,690
2020	4,116	2,908	48,390	29,399	1,874,295

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
2001	8,844	1,117	7,727	283	418	142	48	156	75	7,722
2002	9,424	1,203	8,221	305	392	156	43	158	75	8,294
2003	8,884	887	7,997	300	355	172	44	161	75	7,776
2004	9,586	1,071	8,515	531	331	188	39	163	110	8,224
2005	10,353	1,118	9,235	448	310	206	38	166	110	9,074
2006	10,150	1,257	8,893	329	307	226	37	169	66	9,016
2007	10,934	1544	9,390	334	291	243	45	176	110	9,735
2008	10,596	1512	9,084	500	284	259	66	191	110	9,186
2009	10,856	1618	9,238	262	291	275	84	211	109	9,624
2010	10,241	1272	8,969	271	304	301	96	232	109	8,929
2011	10,175	948	9,227	269	317	372	103	248	120	8,747
2012	10,462	1,046	9,416	310	329	470	113	262	120	8,859
2013	10,726	1,056	9,670	377	340	570	126	275	120	8,918
2014	10,841	975	9,866	378	363	669	143	285	120	8,883
2015	11,036	978	10,058	372	390	774	161	294	120	8,926
2016	11,042	829	10,213	335	412	859	181	301	120	8,834
2017	11,234	832	10,402	336	431	947	201	308	120	8,892
2018	11,421	834	10,587	337	450	1,033	219	314	120	8,949
2019	11,857	1,086	10,771	338	462	1,116	233	320	120	9,268
2020	12,044	1,089	10,955	339	469	1,196	241	325	120	9,354

Historical Values (2001 - 2010):

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 (2011 - 2020):

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
2000/01	11,456	1,984	9,472	255	829	259	23	121	185	9,785
2001/02	10,683	1,624	9,059	285	822	284	24	121	188	8,958
2002/03	11,552	1,538	10,014	271	795	312	27	122	191	9,833
2003/04	9,323	1,167	8,156	498	788	342	26	122	261	7,285
2004/05	10,830	1,600	9,230	575	779	371	26	123	282	8,674
2005/06	10,698	1,467	9,231	298	762	413	26	124	239	8,835
2006/07	9,896	1,576	8,320	304	671	453	26	126	262	8,055
2007/08	10,964	1,828	9,136	234	763	487	34	132	278	9,036
2008/09	12,092	2,229	9,863	268	759	522	71	147	290	10,035
2009/10	13,697	2,189	11,508	230	651	567	80	161	291	11,717
2010/11	11,645	1,625	10,020	269	661	633	93	178	233	9,577
2011/12	11,856	1,672	10,184	310	672	720	97	183	234	9,640
2012/13	12,114	1,701	10,413	377	681	810	104	190	236	9,717
2013/14	12,249	1,649	10,600	378	693	905	112	194	237	9,731
2014/15	12,486	1,701	10,785	372	739	1,001	123	199	238	9,816
2015/16	12,693	1,755	10,938	335	779	1,079	136	202	239	9,924
2016/17	12,780	1,657	11,123	336	802	1,159	149	205	240	9,889
2017/18	13,015	1,710	11,305	337	826	1,238	162	208	241	10,003
2018/19	13,496	2,012	11,484	338	848	1,315	173	210	243	10,370
2019/20	13,727	2,066	11,661	339	855	1,389	181	213	244	10,507

Historical Values (2001 - 2010):

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 (2011 - 2020):

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 (%) **
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	49,208	543	442	565	38,556	6,619	2,483	47,658	53.1
2009	45,978	583	492	779	37,824	3,696	2,604	44,124	44.5
2010	48,135	638	557	779	38,925	3,493	3,742	46,160	45.3
2011	44,383	907	589	840	36,470	3,560	2,017	42,047	50.1
2012	46,911	1,185	630	842	37,016	4,483	2,754	44,253	52.3
2013	48,615	1,469	669	840	38,341	4,582	2,714	45,637	53.6
2014	49,674	1,758	709	840	38,642	4,968	2,757	46,367	54.4
2015	50,455	2,067	754	840	39,007	5,041	2,746	46,794	54.4
2016	50,181	2,365	798	842	39,411	4,126	2,639	46,176	53.0
2017	50,466	2,657	842	840	39,860	3,475	2,793	46,128	53.2
2018	51,333	2,937	882	840	40,377	3,468	2,829	46,674	53.3
2019	52,778	3,209	914	840	40,853	4,049	2,912	47,814	52.6
2020	53,654	3,471	951	842	41,366	4,116	2,908	48,390	52.4

* 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		FORECAST		FORECAST	
	2010		2011		2012	
	PEAK DEMAND	NEL	PEAK DEMAND	NEL	PEAK DEMAND	NEL
MONTH	MW	GWh	MW	GWh	MW	GWh
JANUARY	11,644	4,152	10,713	2,806	10,833	3,339
FEBRUARY	8,746	3,425	8,474	2,821	8,612	2,913
MARCH	8,276	3,173	7,174	3,115	7,336	3,220
APRIL	6,183	3,084	7,587	3,130	7,798	3,250
MAY	8,585	4,221	8,694	3,813	8,917	3,957
JUNE	9,516	4,644	9,124	4,079	9,333	4,232
JULY	9,600	4,682	9,390	4,322	9,587	4,482
AUGUST	9,467	4,554	9,436	4,363	9,610	4,532
SEPTEMBER	8,844	4,030	8,871	3,996	9,094	4,177
OCTOBER	7,753	3,355	8,251	3,523	8,492	3,708
NOVEMBER	6,180	2,812	6,810	2,908	7,042	3,077
DECEMBER	10,381	4,028	7,588	3,171	7,733	3,366
TOTAL		46,160		42,047		44,253

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.

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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	NUCLEAR		TRILLION BTU	51	0	48	72	69	82	77	83	74	82	76	83
(2)	COAL		1,000 TON	4,749	5,201	4,906	5,535	5,743	5,846	4,678	4,485	4,884	4,658	4,842	4,905
(3)	RESIDUAL	TOTAL	1,000 BBL	1,801	1,289	507	239	421	376	508	767	920	937	1,283	1,099
(4)		STEAM	1,000 BBL	1,801	1,289	507	239	421	376	508	767	920	937	1,283	1,099
(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	580	862	302	226	244	261	249	315	291	351	572	378
(9)		STEAM	1,000 BBL	92	65	197	214	208	205	189	204	187	188	164	181
(10)		CC	1,000 BBL	39	5	0	0	0	0	0	0	0	0	0	0
(11)		CT	1,000 BBL	449	792	105	12	35	57	60	111	104	163	407	197
(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	182,956	151,054	141,176	146,970	147,568	175,745	174,454	174,777	176,829	182,848	183,994
(14)		STEAM	1,000 MCF	12,463	19,544	17,966	16,429	18,322	18,003	18,330	16,626	15,747	15,301	15,927	15,581
(15)		CC	1,000 MCF	120,082	152,468	124,952	119,390	122,863	122,858	150,791	149,267	148,883	150,999	152,612	154,215
(16)		CT	1,000 MCF	12,132	10,944	8,136	5,358	5,786	6,707	6,624	8,561	10,148	10,528	14,308	14,198
	OTHER (SPECIFY)														
(17)	OTHER, DISTILLATE	ANNUAL FIRM INTERCHANGE	1,000 BBL	N/A	N/A	0	0	0	0	0	0	0	0	0	0
(18)	OTHER, NATURAL GAS	ANNUAL FIRM INTERCHANGE, CC	1,000 MCF	N/A	N/A	9,779	9,235	9,710	9,310	8,539	2,773	0	0	0	0
(18.1)	OTHER, NATURAL GAS	ANNUAL FIRM INTERCHANGE, CT	1,000 MCF	N/A	N/A	9,108	8,406	11,141	11,910	11,945	14,568	16,609	16,834	20,801	18,655
(19)	OTHER, COAL	ANNUAL FIRM INTERCHANGE, STEAM	1,000 TON	N/A	N/A	242	252	243	231	171	65	0	0	0	0

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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	ANNUAL FIRM INTERCHANGE 1/		GWh	1,216	2,017	843	798	1,061	1,125	887	1,108	1,360	1,354	1,747	1,508
(2)	NUCLEAR		GWh	4,945	0	4,648	6,978	6,904	8,267	7,697	8,289	7,468	8,267	7,582	8,289
(3)	COAL		GWh	11,089	12,115	11,032	12,482	12,970	13,209	10,328	9,919	10,818	10,300	10,753	10,871
(4)	RESIDUAL	TOTAL	GWh	974	683	291	134	241	212	287	435	524	533	733	626
(5)		STEAM	GWh	974	683	291	134	241	212	287	435	524	533	733	626
(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	261	381	49	5	16	23	25	48	46	70	181	85
(10)		STEAM	GWh	52	36	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWh	23	4	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWh	186	341	49	5	16	23	25	48	46	70	181	85
(13)		DIESEL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(14)	NATURAL GAS	TOTAL	GWh	18,457	23,692	19,704	18,377	19,101	19,099	23,461	23,289	23,336	23,586	24,250	24,433
(15)		STEAM	GWh	1,044	1,609	1,435	1,293	1,461	1,427	1,471	1,340	1,270	1,228	1,286	1,255
(16)		CC	GWh	16,495	21,241	17,496	16,548	17,075	17,039	21,352	21,154	21,132	21,400	21,689	21,881
(17)		CT	GWh	918	842	772	536	565	634	638	795	934	958	1,275	1,296
(18)	OTHER 2/														
	QF PURCHASES		GWh	2,920	2,916	2,584	2,603	2,354	1,528	1,524	1,531	1,524	1,526	1,523	1,531
	RENEWABLES		GWh	1,031	1,215	1,044	1,070	1,140	1,135	1,055	1,043	1,053	1,037	1,044	1,047
	IMPORT FROM OUT OF STATE		GWh	3273	3161	1,853	1,805	1,850	1,768	1,529	514	0	0	0	0
	EXPORT TO OUT OF STATE		GWh	-42	-20	0	0	0	0	0	0	0	0	0	0
(19)	NET ENERGY FOR LOAD		GWh	44,124	46,160	42,048	44,253	45,637	46,367	46,794	46,176	46,128	46,674	47,814	48,390

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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	ANNUAL FIRM INTERCHANGE 1/		%	2.8%	4.4%	2.0%	1.8%	2.3%	2.4%	1.9%	2.4%	2.9%	2.9%	3.7%	3.1%
(2)	NUCLEAR		%	11.2%	0.0%	11.1%	15.8%	15.1%	17.8%	16.4%	18.0%	16.2%	17.7%	15.9%	17.1%
(3)	COAL		%	25.1%	26.2%	26.2%	28.2%	28.4%	28.5%	22.1%	21.5%	23.5%	22.1%	22.5%	22.5%
(4)	RESIDUAL	TOTAL	%	2.2%	1.5%	0.7%	0.3%	0.5%	0.5%	0.6%	0.9%	1.1%	1.1%	1.5%	1.3%
(5)		STEAM	%	2.2%	1.5%	0.7%	0.3%	0.5%	0.5%	0.6%	0.9%	1.1%	1.1%	1.5%	1.3%
(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	%	0.6%	0.8%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.4%	0.2%
(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	%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(12)		CT	%	0.4%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.4%	0.2%
(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	%	41.8%	51.3%	46.9%	41.5%	41.9%	41.2%	50.1%	50.4%	50.6%	50.5%	50.7%	50.5%
(15)		STEAM	%	2.4%	3.5%	3.4%	2.9%	3.2%	3.1%	3.1%	2.9%	2.8%	2.6%	2.7%	2.6%
(16)		CC	%	37.4%	46.0%	41.6%	37.4%	37.4%	36.7%	45.6%	45.8%	45.8%	45.8%	45.4%	45.2%
(17)		CT	%	2.1%	1.8%	1.8%	1.2%	1.2%	1.4%	1.4%	1.7%	2.0%	2.1%	2.7%	2.7%
(18)	OTHER 2/														
	QF PURCHASES		%	6.6%	6.3%	6.1%	5.9%	5.2%	3.3%	3.3%	3.3%	3.3%	3.3%	3.2%	3.2%
	RENEWABLES		%	2.3%	2.6%	2.5%	2.4%	2.5%	2.4%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%
	IMPORT FROM OUT OF STATE		%	7.4%	6.8%	4.4%	4.1%	4.1%	3.8%	3.3%	1.1%	0.0%	0.0%	0.0%	0.0%
	EXPORT TO OUT OF STATE		%	-0.1%	0.0%	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.

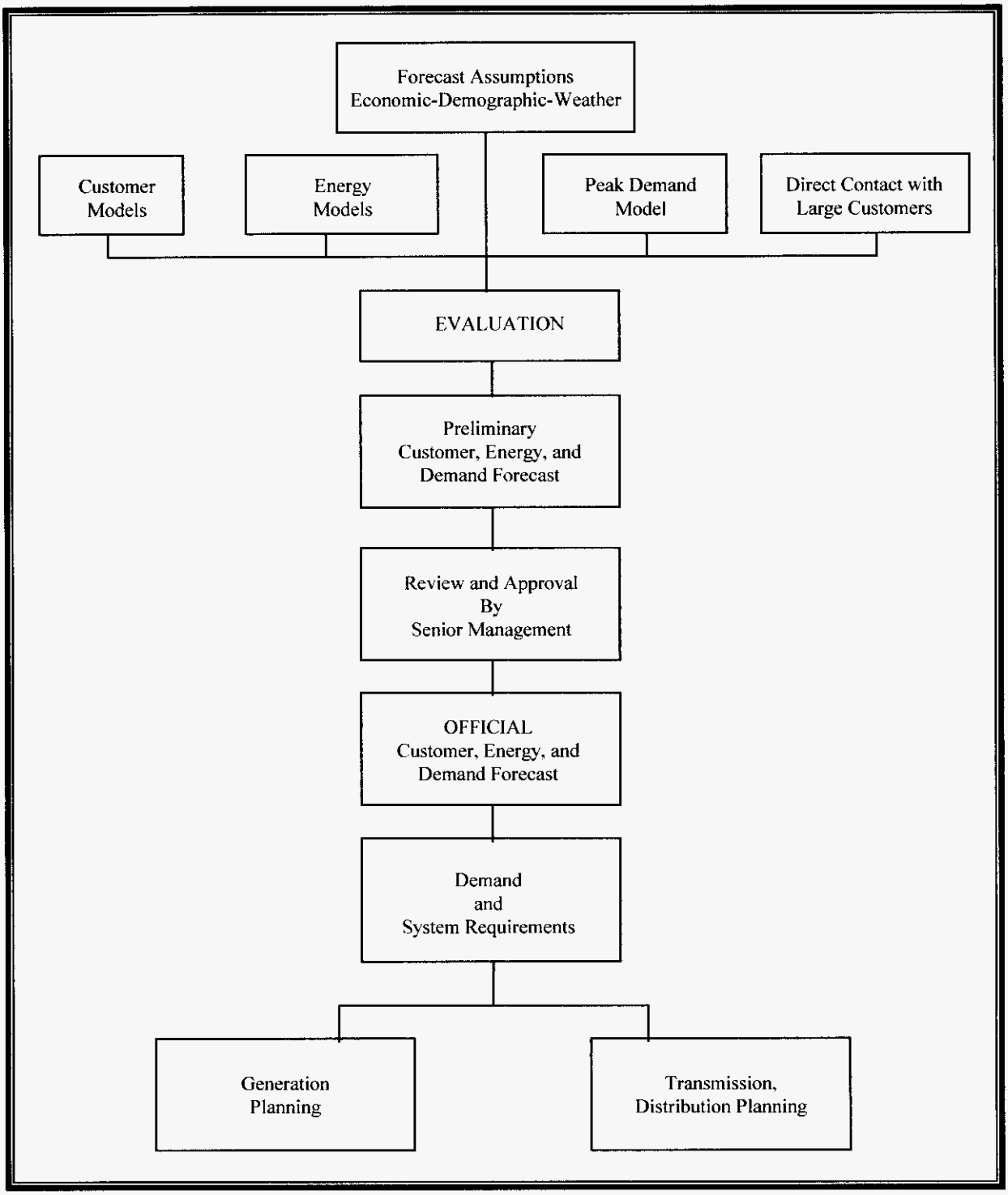
Figure 2.1, entitled "Customer, Energy and Demand Forecast," gives a general description of PEF's forecasting process. Highlighted in the diagram is a disaggregated modeling approach that blends the impacts of average class usage, as well as customer growth, based on a specific set of assumptions for 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 BEBR at the University of Florida as published in "Florida Population Studies" 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 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 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 31 percent of the industrial class MWh sales in 2010. 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, including environmental regulations. 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 Chattahoochee, Mt. Dora and Williston. 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 Reedy Creek Utilities, Seminole Electric Cooperative, Inc. (SECI), and the cities of New Smyrna Beach, Tallahassee, Gainesville, Homestead and Winter Park.

   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 that commenced in 2010 and lasts 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 required to meet the approved goals set in March 2010, 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 forecast 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.

As expected, a turning point took place in 2010 as the State began to add jobs and company customer growth turned positive. The Federal government's Homebuyer Tax Credit program even appeared to stimulate the Florida housing sector as the level of vacant homes began to drop. While the worst of the Great Recession is behind us, government stimulus measures are a thing of the past as well. An effort to cut out large amounts of government spending to balance budgets run the risk of being counter-cyclical at a time when economic growth in Florida remains weak. The outlook calls for a continued improvement in economic activity as consumer confidence improves and spending returns to normal levels. Healthy economic growth, however, is not expected until 2012.

LONG-TERM ECONOMIC ASSUMPTIONS

The long term economic outlook assumes that changes in economic and demographic conditions, as well as technological change impacting 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. Florida is expected to continue to be an attractive state for the increasing population of baby-boom generation retirees. 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 caused by the "tech bubble", 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 we unfortunately observed in these last few years, all of this has completely unraveled. Home prices now rest at levels below the beginning of the boom period and many who have purchased homes in this decade are "under water" in their mortgages. This has significant repercussions on the future of the national and Florida economies.

One significant outcome of this housing crisis is the financial strain it has had on State and local government finances. The drop in real estate values has severely reduced tax receipts and created the need to slash government spending at all levels. This will dampen economic growth for the next few years. A second outcome of the housing crisis - the decline in home values – has taken the largest "nest egg" of retiree wealth and made it disappear. The timing of many retiree plans has been delayed due to the destruction of wealth from this recession. Some economists believe that the recession was so devastating on the psyche of a large share of the American people that a new generation has been created that will not rely on credit in the way the country had become accustomed. Based upon the increase in credit standards now in effect at most lending institutions, this may become a self-fulfilling prophecy. Although this may be economically healthy in the long run, a reduction in credit spending may reduce short-term economic activity levels.

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 due to rising fuel prices. The projection for future 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 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 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 such a large 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. Three 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, Homestead, Gainesville, Tallahassee and Winter Park, and another power provider Reedy Creek Utilities (RCU). 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.

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, RCU, 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

During the 2005 through 2009 time frame, PEF exceeded all of the cumulative conservation goals established by the FPSC in 2004. On December 30, 2009, the FPSC approved a new set of conservation goals for PEF that span the ten-year period from 2010 through 2019 (in Docket 080408-EG, Order No. PSC-09-0855-FOF-EG). These new conservation goals are based on an enhanced total resource cost (E-TRC) test plus the residential portion of PEF's top ten efficiency measures that were shown to have a payback period of two years or less. This decision represented a departure from the FPSC's traditional use of the rate impact measure (RIM) test for adopting cost-effective conservation goals and resulted in substantially higher goals for PEF than the previous set of FPSC-approved goals. The December 30, 2009 Order approving the conservation goals also included a directive for PEF to file pilot programs focusing on encouraging solar water heating and solar photovoltaic (PV) technologies in its Demand Side

Management (DSM) Plan. Expenditures for recovery of these pilot programs were limited to $6,467,592.

PEF subsequently filed a Motion For Reconsideration on January 12, 2010 requesting the FPSC to reconsider their decision and issue corrected conservation goals for PEF. On March 31, 2010 the FPSC granted part of PEF's request and issued revised numeric conservation goals (in Docket No. 080408-EG, Order No. PSC-10-0198-FOF-EG). The following tables show PEF's new annual conservation goals for the 2010-2019 forecast period as established by the FPSC on March 31, 2010.

Residential 2009 Annual FPSC Conservation Goals

Year	Summer MW	Winter MW	Annual GWh Energy
2010	79.6	81.3	261.6
2011	81.5	86.8	267.6
2012	84.5	90.8	276.7
2013	86.5	93.5	282.7
2014	88.4	96.2	288.8
2015	93.8	100.9	309.9
2016	102.3	111.7	297.8
2017	101.9	111.1	291.8
2018	96.4	103.6	279.7
2019	81.9	79.1	270.6

Commercial/Industrial 2009 Annual FPSC Conservation Goals

Year	Summer MW	Winter MW	Annual GWh Energy
2010	13.7	5.3	31.1
2011	16.2	5.3	33.0
2012	25.5	11.4	35.9
2013	25.9	11.5	37.7
2014	26.4	11.5	39.6
2015	27.6	11.7	46.2
2016	27.1	11.6	42.5
2017	27.0	11.6	40.6
2018	25.7	11.4	36.8
2019	22.3	11.3	34.0

The forecasts contained in this Ten-Year Site Plan document are based on these new FPSC-approved goals. On March 30, 2010 PEF filed a DSM Plan (in Docket 100160-EG) designed to meet the new ten-year conservation goals, which included a Demand Side Renewable Portfolio consisting of six solar pilot programs. The solar pilot programs were subsequently approved by the FPSC in PAA Order No. PSC-10-0605-PAA-EG, issued October 4, 2010, and became effective with Consummating Order No. PSC-10-0649-CO-EG issued on October 28, 2010. All other DSM programs proposed within PEF's March 30, 2010 DSM Plan were denied approval by the FPSC. PEF has since filed two other DSM plans for consideration by the FPSC; however, at this time neither of these has been approved. The following table shows the 2010 achievements from PEF's existing set of DSM programs compared to the new 2010 conservation goals established by the FPSC.

PEF Annual 2010 Conservation Achievements Compared to Goals

Segment	Summer MW		Winter MW		GWh Energy	
	Achieved	Goal	Achieved	Goal	Achieved	Goal
Residential	41	79.6	80	81.3	55	261.6
Commercial/Industrial	34	13.7	30	5.3	62	31.1

PEF's currently approved DSM programs consist of six residential programs, eight commercial and industrial programs, one research and development program, and six solar pilot programs. The programs are subject to periodic monitoring and evaluation for the purpose of ensuring that all demand-side 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

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

This is the umbrella program to increase energy efficiency for existing residential homes. It combines efficiency improvements to the thermal envelope with upgrades to 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

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

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 upgrades to 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

This 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 (EnergyWise)

This program 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.

COMMERCIAL/INDUSTRIAL (C/I) PROGRAMS

Business Energy Check

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

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. The Better Business program promotes energy efficient 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

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

This program promotes a reduction in demand and energy by subsidizing energy conservation projects for PEF customers. The intent of the program is to encourage legitimate energy efficiency measures that reduce peak demand and/or 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 may be eligible for an incentive payment, subject to PEF approval.

Commercial Energy Management (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

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 demand when PEF deems it necessary. Customers participating in the Standby Generation program receive a monthly credit on their electric bills according to their demonstrated ability to reduce demand at PEF's request.

Interruptible Service

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 the ability to interrupt load, customers participating in the Interruptible Service program receive a monthly credit applied to their electric bills.

Curtailable Service

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 curtail 25 percent of their average monthly billing demand. Customers participating in the Curtailable Service program receive a monthly credit applied to their electric bills.

RESEARCH AND DEVELOPMENT PROGRAMS

Technology Development

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 the rule, the Technology Development program facilitates the research of innovative technologies and 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 that provide an increase in customer awareness of efficient energy usage 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.

DEMAND-SIDE RENEWABLE PORTFOLIO

Solar Water Heating for the Low-income Residential Customers Pilot

This pilot program is designed to assist low-income families with energy costs by incorporating a solar thermal water heating system in their residence while it is under construction. PEF will collaborate with non-profit builders to provide low-income families with a residential solar thermal water heater. The solar thermal system will be provided at no cost to the non-profit builders or the residential participants. The program will be limited to a targeted annual incentive cap of $114,000.

Solar Water Heating with Energy Management

This program represents an updated version of the previous residential Renewable Energy Program. It encourages residential customers to install new solar thermal water heating systems on their residence with the requirement for customers to participate in our residential Energy Management program (EnergyWise). Participants will receive a one-time $550 rebate designed to reduce the upfront cost of the renewable energy system, plus a monthly bill credit associated

with their participation in the residential Energy Management program. The program will be limited to a targeted annual incentive cap of $1,237,500.

Residential Solar Photovoltaic Pilot

This pilot encourages residential customers to install new solar photovoltaic (PV) systems on their home. A PEF audit is required prior to system installation to qualify for this rebate. . Participating customers will receive a rebate of up to $20,000 to reduce the initial investment required to install a qualified renewable solar PV system. The rebate is based on the wattage of the PV dc power rating. The program will be limited to a targeted annual incentive cap of $1,000,000 per year.

Commercial Solar Photovoltaic Pilot

This pilot encourages commercial customers to install new solar PV systems on their facilities. A PEF energy audit is required prior to system installation to qualify for this rebate. The program provides participating commercial customers with a tiered rebate to reduce the initial investment in a qualified solar PV system. The rebate is based on the PV dc power rating of the unit installed. The total incentives per participant will be limited to $130,000, based on a maximum installation of 100 KW. The program will be limited to a targeted annual incentive cap of $1,000,000 per year.

Photovoltaic For Schools Pilot

This pilot is designed to assist schools with energy costs while promoting energy education. This program provides participating public schools with new solar photovoltaic systems at no cost to the school. The primary goals of the program are to:

- Eliminate the initial investment required to install a solar PV system
- Increase renewable energy generation on PEF's system
- Increase participation in existing residential Demand Side Management measures through energy education
- Increase solar education and awareness in PEF communities and schools

The program will be limited to an annual target of one system with a rating up to 100 KW installed on a post secondary public school and ten 10 KW systems with battery backup option installed on public K-12 schools, preferably serving as emergency shelters.

Research and Demonstration Pilot

The purpose of this program is to research technology and establish R&D initiatives to support the development of renewable energy pilot programs. Demonstration projects will provide real-world field testing to assist in the development of these initiatives. The program will be limited to a maximum annual expenditure equal to 5% of the total Demand-Side Renewable Portfolio annual expenditures.

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 11,753 MW (see Table 3.1). This capacity resource includes nuclear (789 MW), fossil steam (3,433 MW), combined-cycle plants (3,250 MW), combustion turbines (2,482 MW; 143 MW of which is owned by Georgia Power for the months June through September), utility purchased power (482 MW), independent power purchases (634 MW), and non-utility purchased power (683 MW). Table 3.2 presents PEF's firm capacity contracts with Renewable and Cogeneration Facilities.

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 over 200 MW. A planned installation of a combustion turbine in 2020 at undesignated existing plant location is 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 capacity with proposed in-service dates during the ten-year period from 2011 through 2020. The planned capacity additions, 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 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 PEF Bulk Electric System (BES) 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, 2010

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	2,291	
Anclote	2	1,011	
Suwannee River	3	131	
Total Fossil Steam	9	3,433	
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	637	
Intercession City	14	982	*(2)*
Bayboro	4	174	
Bartow	4	177	
Suwannee	3	154	
Turner	4	139	
Higgins	4	113	
Avon Park	2	48	
University of Florida	1	46	
Rio Pinar	1	12	
Total Combustion Turbine	47	2,482	
Total Units	**63**		
Total Net Generating Capability		**9,954**	

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

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

Purchased Power			
Firm Qualifying Facility	13	683	
Investor Owned Utilities	2	482	
Independent Power Producers	2	634	
TOTAL CAPACITY RESOURCES		11,753	

TABLE 3.2

PROGRESS ENERGY FLORIDA
FIRM RENEWABLES
AND COGENERATION CONTRACTS

AS OF DECEMBER 31, 2010

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[c]	TOTAL CAPACITY AVAILABLE	SYSTEM FIRM SUMMER 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
2011	9,815	1,709	0	173	11,697	8,747	2,950	34%	0	2,950	34%
2012	9,815	2,026	0	173	12,014	8,858	3,156	36%	0	3,156	36%
2013	9,966	1,916	0	173	12,055	8,918	3,136	35%	0	3,136	35%
2014	9,966	1,785	0	173	11,924	8,882	3,041	34%	0	3,041	34%
2015	9,966	1,785	0	173	11,924	8,925	2,998	34%	0	2,998	34%
2016	9,835	1,373	0	173	11,381	8,834	2,546	29%	0	2,546	29%
2017	9,835	1,373	0	173	11,381	8,891	2,489	28%	0	2,489	28%
2018	9,835	1,373	0	173	11,381	8,948	2,432	27%	0	2,432	27%
2019	9,835	1,373	0	173	11,381	9,268	2,112	23%	0	2,112	23%
2020	10,012	1,373	0	173	11,558	9,354	2,204	24%	0	2,204	24%

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. QF includes Firm Renewables

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[c]	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
2010/11	11,031	1,672	0	173	12,876	9,577	3,299	34%	0	3,299	34%
2011/12	11,035	1,762	0	173	12,970	9,640	3,329	35%	0	3,329	35%
2012/13	11,035	2,110	0	173	13,318	9,716	3,601	37%	0	3,601	37%
2013/14	11,185	1,868	0	173	13,227	9,730	3,496	36%	0	3,496	36%
2014/15	11,185	1,868	0	173	13,227	9,815	3,411	35%	0	3,411	35%
2015/16	11,185	1,868	0	173	13,227	9,924	3,302	33%	0	3,302	33%
2016/17	11,052	1,456	0	173	12,682	9,889	2,792	28%	0	2,792	28%
2017/18	11,052	1,456	0	173	12,682	10,003	2,678	27%	0	2,678	27%
2018/19	11,052	1,456	0	173	12,682	10,369	2,312	22%	0	2,312	22%
2019/20	11,052	1,456	0	173	12,682	10,506	2,175	21%	0	2,175	21%

Notes:

a. Total Installed Capacity includes the 161 MW from Intercession City P11.

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

c. QF includes Firm Renewables

PROGRESS ENERGY FLORIDA

SCHEDULE 8
PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

AS OF JANUARY 1, 2011 THROUGH DECEMBER 31, 2020

(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	3	CITRUS	NP						4/2011			4	4	A	(3)
CRYSTAL RIVER	3	CITRUS	NP						5/2013			151	151	A	(3)
SUWANNEE RIVER	1-3	SUWANNEE	ST							d.		(131)	(133)		(1)
UNKNOWN	1	UNKNOWN	GT					06/2018	6/2020			178	205	P	(1)

a. Net capability of Crystal River 3 represents approximately 91.8% 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.

PROGRESS ENERGY FLORIDA

SCHEDULE 9
STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES
AS OF JANUARY 1, 2011

(1)	Plant Name and Unit Number:	**Undesignated CT1**
(2)	Capacity	
	a. Summer:	177.5
	b. Winter:	205.3
(3)	Technology Type:	COMBUSTION TURBINE
(4)	Anticipated Construction Timing	
	a. Field construction start date:	6/2018
	b. Commercial in-service date:	6/2020 (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 (%):	12.2 %
	e. Average Net Operating Heat Rate (ANOHR):	10,748 BTU/kWh
(13)	Projected Unit Financial Data	
	a. Book Life (Years):	25
	b. Total Installed Cost (In-service year $/kW):	703.60
	c. Direct Construction Cost ($/kW):	554.30
	d. AFUDC Amount ($/kW):	40.29
	e. Escalation ($/kW):	109.00
	f. Fixed O&M ($/kW-yr):	3.84
	g. Variable O&M ($/MWh):	7.81
	h. K Factor:	NO CALCULATION

PROGRESS ENERGY FLORIDA

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

Transmission Line Name

(1) POINT OF ORIGIN AND TERMINATION:	N/A
(2) NUMBER OF LINES:	N/A
(3) RIGHT-OF-WAY:	N/A
(4) LINE LENGTH:	N/A
(5) VOLTAGE:	N/A
(6) ANTICIPATED CONSTRUCTION TIMING:	N/A
(7) ANTICIPATED CAPITAL INVESTMENT:	N/A
(8) SUBSTATIONS:	N/A
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

* Notes

INTEGRATED RESOURCE PLANNING OVERVIEW

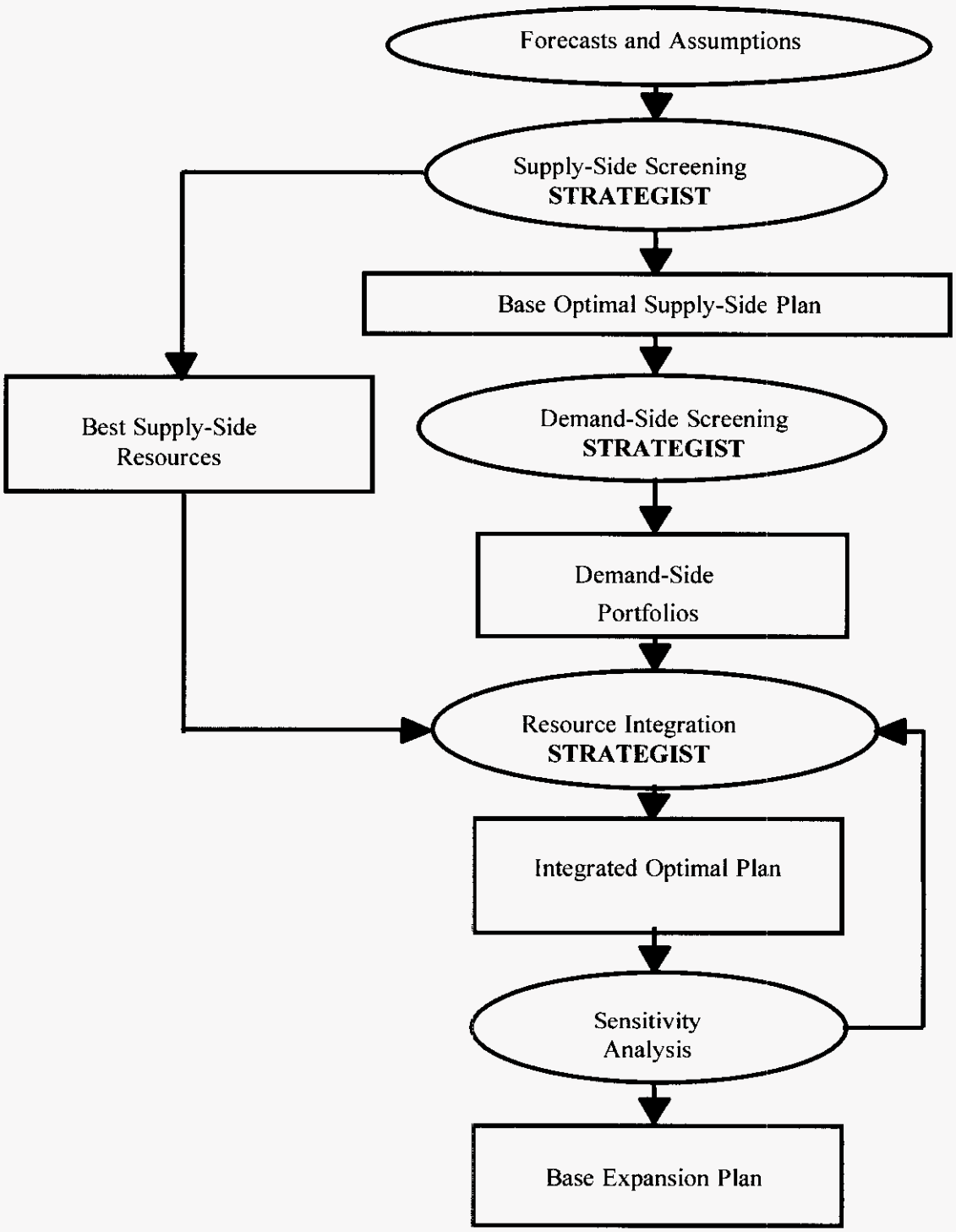
PEF employs an Integrated Resource Planning (IRP) process to determine the most cost-effective mix of supply- and demand-side alternatives that will reliably satisfy our customers' future demand and energy needs. PEF's IRP process incorporates state-of-the-art computer models used to evaluate a wide 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 20 percent 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.

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 4.78 percent, and an equity return of 10.5 percent. The assumptions resulted on a weighted average cost of capital of 7.64 percent and an after-tax discount rate of 6.75 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 combustion turbines from the Vandolah Purchase Power contracts.

In 2008, the FPSC approved PEF's petition for a Determination of Need for the two nuclear units in Levy County. The Company continues to plan the installation of Levy Units 1 and 2 to meet its long term generation capacity needs beyond the ten years in this TYSP. PEF has filed revised dates for the commercial operation of Levy Units 1 and 2 scheduled for June 2021 and December 2022 respectively in Docket 100009-EI. Through the Company's ongoing IRP process, 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 which are outside the planning horizon for this TYSP. 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 (45 MW), Hathaway Renewables (48 MW), TransWorld Energy (40 MW), and FB Energy (60 MW). The FB Energy facility will utilize an energy crop, and the BG&E unit, Hathaway Renewables, and TransWorld Energy will utilize wood products.

PEF has also signed several As-Available contracts utilizing biomass and solar PV technologies.

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 265 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 an addition of a combustion turbine. 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. The plan also includes uprates to the Crystal River nuclear unit No. 3 in 2011 and 2013, and new nuclear units beyond the ten year planning horizon of this TYSP. 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.

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):

- PEF: ATC Algorithms 2/24/09, which can be found on the PEF OASIS website: http://www.oatioasis.com/FPC/FPCdocs/ATC_Mathematical_Algorithm.doc

- 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%20CALCULATION%20AND%20COORDINATION%20PROCEDURES.pdf

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.

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.

TABLE 3.3
PROGRESS ENERGY FLORIDA
LIST OF PROPOSED BULK TRANSMISSION LINE ADDITIONS
2011 – 2020

MVA RATING WINTER	LINE OWNERSHIP	TERMINALS		LINE LENGTH (CKT-MILES)	COMMERCIAL IN-SERVICE DATE (MO./YEAR)	NOMINAL VOLTAGE (kV)
1000	PEF	HINES ENERGY COMPLEX	WEST LAKE WALES #2	21	12/1/2011	230
1370	PEF	INTERCESSION CITY	Gifford	13	5/31/2013	230
1000	PEF	KATHLEEN	ZEPHYRHILLS N	11	5/31/2012	230
1000	PEF	DISSTON	NORTHEAST	4	5/31/2013	230
1000	PEF	DISSTON	40TH STREET	4	5/31/2014	230

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. The installation of a nuclear power unit at the Levy County greenfield site is planned for outside of the ten year planning horizon for this TYSP. 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. The Company is planning the construction of nuclear generation at this site with a planned operation beyond the 10 year planning horizon of this TYSP.

The Levy County site (see Figures 4.1 a &b) 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