Dianne M. Triplett
ASSOCIATE GENERAL COUNSEL
Duke Energy Florida, Inc.

April 1, 2015

VIA ELECTRONIC DELIVERY

Ms. Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Ten-Year Site Plan as of December 31, 2014

Dear Ms. Stauffer:

Pursuant to Rule 25-22.071, F.A.C., please find enclosed for filing Duke Energy Florida, Inc.'s 2015 Ten-Year Site Plan.

Thank you for your assistance in this matter. Please feel free to call me at (727) 820-4692 should you have any questions.

Sincerely,

/s/ Dianne M. Triplett

Dianne M. Triplett

DMT:at
Attachment

Duke Energy Florida, Inc.
Ten-Year Site Plan

April 2015

2015-2024

Submitted to:
Florida Public Service Commission

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. Duke Energy Florida, Inc.'s TYSP is compiled in accordance with FPSC Rules 25-22.070 through 22.072, Florida Administrative Code.

DEF's 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 DEF'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 DEF'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.

(Blank Page)

CHAPTER 1

DESCRIPTION OF EXISTING FACILITIES

CHAPTER 1
DESCRIPTION OF EXISTING FACILITIES

EXISTING FACILITIES OVERVIEW

OWNERSHIP

Duke Energy Florida, Inc. (DEF or the Company) is a wholly owned subsidiary of Duke Energy Corporation (Duke Energy).

AREA OF SERVICE

DEF has an obligation to serve approximately 1.7 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. DEF is interconnected with 21 municipal and nine rural electric cooperative systems who serve additional customers in Florida. DEF is subject to the rules and regulations of the Federal Energy Regulatory Commission (FERC), the Nuclear Regulatory Commission (NRC), and the FPSC. DEF'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 DEF 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.

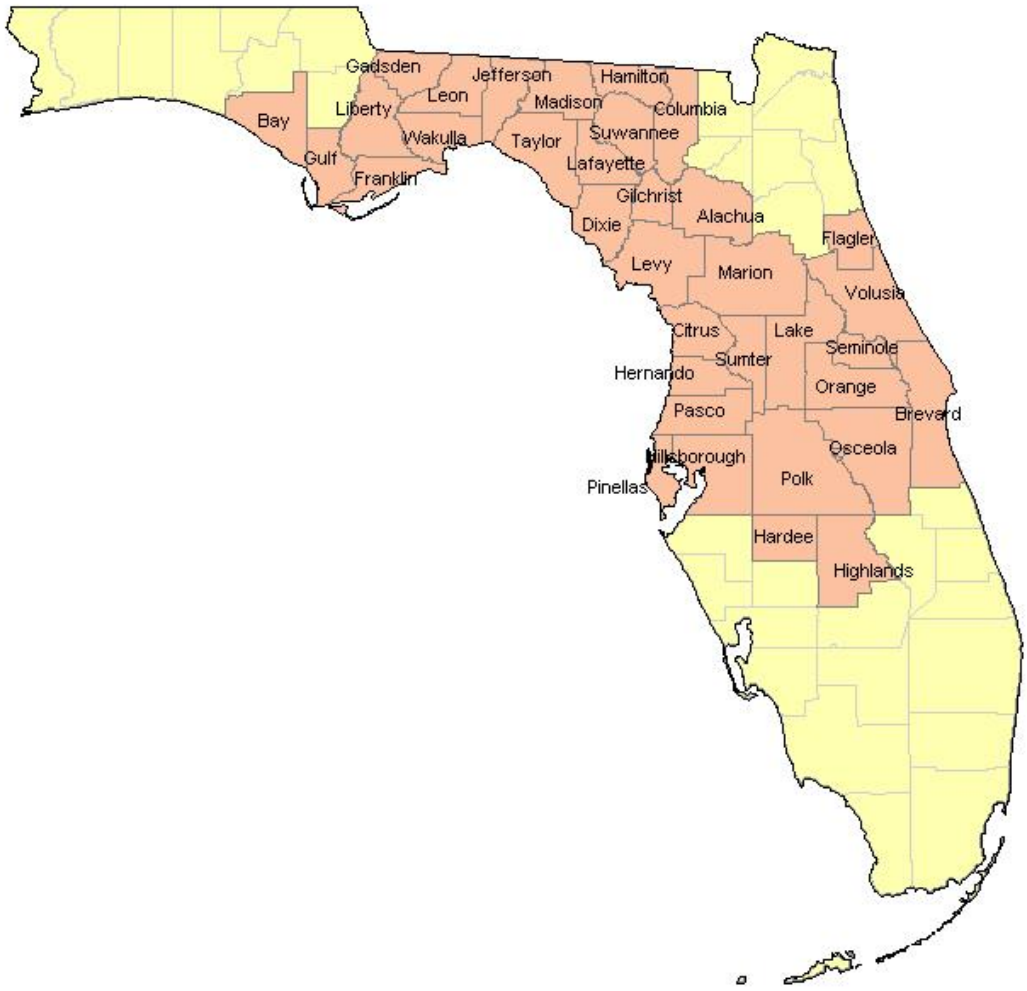
ENERGY MANAGEMENT and ENERGY EFFICIENCY

The Company's residential Energy Management program represents a demand response type of program where participating customers help manage future growth and costs. Approximately 413,000 customers participated in the residential Energy Management program during 2014, contributing about 654 MW of winter peak-shaving capacity for use during high load periods. DEF'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, 2014, DEF had total summer capacity resources of 11,408 MW consisting of installed capacity of 9,154 MW and 2,254 MW of firm purchased power. Additional information on DEF's existing generating resources can be found in Schedule 1 and Table 3.1 (Chapter 3).

FIGURE 1.1
DUKE ENERGY FLORIDA
County Service Area Map



DUKE ENERGY FLORIDA

SCHEDULE 1
EXISTING GENERATING FACILITIES

AS OF DECEMBER 31, 2014

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				FUEL		FUEL TRANSPORT			COM'L IN-	EXPECTED	GEN. MAX.	NET CAPABILITY	
PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	PRI.	ALT.	PRI.	ALT.	ALT. FUEL DAYS USE	SERVICE MO./YEAR	RETIREMENT MO./YEAR	NAMEPLATE KW	SUMMER MW	WINTER MW
STEAM													
ANCLOTE	1	PASCO	ST	NG		PL			10/74		556,200	521	524
ANCLOTE	2	PASCO	ST	NG		PL			10/78		556,200	520	524
CRYSTAL RIVER	1	CITRUS	ST	BIT		RR	WA		10/66	4/2018 ***	440,550	370	372
CRYSTAL RIVER	2	CITRUS	ST	BIT		RR	WA		11/69	4/2018 ***	523,800	499	503
CRYSTAL RIVER	4	CITRUS	ST	BIT		WA	RR		12/82		739,260	712	721
CRYSTAL RIVER	5	CITRUS	ST	BIT		WA	RR		10/84		739,260	710	721
SUWANNEE RIVER	1	SUWANNEE	ST	NG		PL		**	11/53	6/2017 ***	34,500	28	28
SUWANNEE RIVER	2	SUWANNEE	ST	NG		PL		**	11/54	6/2017 ***	37,500	29	28
SUWANNEE RIVER	3	SUWANNEE	ST	NG		PL		**	10/56	6/2018 ***	75,000	71	73
											Steam Total	**3,460**	**3,494**
COMBINED-CYCLE													
BARTOW	4	PINELLAS	CC	NG	DFO	PL	TK	**	6/09		1,253,000	1,105	1,185
HINES ENERGY COMPLEX	1	POLK	CC	NG	DFO	PL	TK	**	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	231
											CC Total	**3,222**	**3,615**
COMBUSTION TURBINE													
AVON PARK	P1	HIGHLANDS	GT	NG	DFO	PL	TK	**	12/68	6/2016 ***	33,790	24	35
AVON PARK	P2	HIGHLANDS	GT	DFO		TK		**	12/68	6/2016 ***	33,790	24	35
BARTOW	P1	PINELLAS	GT	DFO		WA		**	5/72		55,700	43	52
BARTOW	P2	PINELLAS	GT	NG	DFO	PL	WA	**	6/72		55,700	42	57
BARTOW	P3	PINELLAS	GT	DFO		WA		**	6/72		55,700	43	53
BARTOW	P4	PINELLAS	GT	NG	DFO	PL	WA	**	6/72		55,700	47	61
BAYBORO	P1	PINELLAS	GT	DFO		WA		**	4/73		56,700	44	59
BAYBORO	P2	PINELLAS	GT	DFO		WA		**	4/73		56,700	42	57
BAYBORO	P3	PINELLAS	GT	DFO		WA		**	4/73		56,700	44	58
BAYBORO	P4	PINELLAS	GT	DFO		WA		**	4/73		56,700	44	58
DEBARY	P1	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	54	65
DEBARY	P2	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	51	64
DEBARY	P3	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	52	63
DEBARY	P4	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	51	63
DEBARY	P5	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	50	63
DEBARY	P6	VOLUSIA	GT	DFO		TK		**	12/75-4/76		66,870	52	63
DEBARY	P7	VOLUSIA	GT	NG	DFO	PL	TK	**	10/92		115,000	83	97
DEBARY	P8	VOLUSIA	GT	NG	DFO	PL	TK	**	10/92		115,000	83	96
DEBARY	P9	VOLUSIA	GT	NG	DFO	PL	TK	**	10/92		115,000	81	97
DEBARY	P10	VOLUSIA	GT	DFO		TK		**	10/92		115,000	80	95
HIGGINS	P1	PINELLAS	GT	NG	DFO	PL	TK	**	3/69	6/2020 ***	33,790	20	20
HIGGINS	P2	PINELLAS	GT	NG	DFO	PL	TK	**	4/69	6/2020 ***	33,790	25	25
HIGGINS	P3	PINELLAS	GT	NG	DFO	PL	TK	**	12/70	6/2020 ***	42,925	32	36
HIGGINS	P4	PINELLAS	GT	NG	DFO	PL	TK	**	1/71	6/2020 ***	42,925	32	35
INTERCESSION CITY	P1	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	48	63
INTERCESSION CITY	P2	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	48	61
INTERCESSION CITY	P3	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	47	63
INTERCESSION CITY	P4	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	47	62
INTERCESSION CITY	P5	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	47	61
INTERCESSION CITY	P6	OSCEOLA	GT	DFO		PL,TK		**	5/74		56,700	49	62
INTERCESSION CITY	P7	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	10/93		115,000	83	94
INTERCESSION CITY	P8	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	10/93		115,000	83	95
INTERCESSION CITY	P9	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	10/93		115,000	82	95
INTERCESSION CITY	P10	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	10/93		115,000	82	95
INTERCESSION CITY	P11 *	OSCEOLA	GT	DFO		PL,TK		**	1/97		165,000	143	161
INTERCESSION CITY	P12	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	12/00		115,000	76	92
INTERCESSION CITY	P13	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	12/00		115,000	76	92
INTERCESSION CITY	P14	OSCEOLA	GT	NG	DFO	PL	PL,TK	**	12/00		115,000	73	92
RIO PINAR	P1	ORANGE	GT	DFO		TK		**	11/70	6/2016 ***	19,290	12	15
SUWANNEE RIVER	P1	SUWANNEE	GT	NG	DFO	PL	TK	**	10/80		61,200	52	67
SUWANNEE RIVER	P2	SUWANNEE	GT	DFO		TK		**	10/80		61,200	51	66
SUWANNEE RIVER	P3	SUWANNEE	GT	NG	DFO	PL	TK	**	11/80		61,200	52	67
TURNER	P1	VOLUSIA	GT	DFO		TK		**	10/70	6/2016 ***	19,290	10	13
TURNER	P2	VOLUSIA	GT	DFO		TK		**	10/70	6/2016 ***	19,290	10	13
TURNER	P3	VOLUSIA	GT	DFO		TK		**	8/74	7/2015 ***	71,200	53	50
TURNER	P4	VOLUSIA	GT	DFO		TK		**	8/74	6/2016 ***	71,200	59	78
UNIV. OF FLA.	P1	ALACHUA	GT	NG		PL			1/94		43,000	46	47
											CT Total	**2,472**	**3,011**
											TOTAL RESOURCES (MW)	**9,154**	**10,120**

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

** APPROXIMATELY 2 TO 8 DAYS OF OIL USE TYPICALLY TARTGETED FOR ENTIRE PLANT.

***DATES FOR RETIREMENT ARE APPROXIMATE AND SUBJECT TO CHANGE

CHAPTER 2

FORECAST OF ELECTRIC POWER DEMAND AND ENERGY CONSUMPTION

CHAPTER 2
FORECAST OF ELECTRIC POWER DEMAND
AND
ENERGY CONSUMPTION

OVERVIEW

The information presented in Schedules 2, 3, and 4 represents DEF's history and forecast of customers, energy sales (GWh), and peak demand (MW). DEF's customer growth is expected to average 1.1 percent between 2015 and 2024, which is more than the ten-year historical average of 0.7 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 financial crisis witnessed both nationwide and in Florida since 2007 has dampened the DEF 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 low mortgage rates, higher household formations and a large retiring baby-boomer population.

Net energy for load (NEL) dropped by an average 1.5 percent per year between 2005 and 2014 due primarily to the economic recession and the weak economic recovery that followed. Sales for Resale in 2014 were only 26% of their 2005 level. An improved economic environment (including improved migration population rates, construction activity, wage growth and consumer spending) is expected to drive the DEF service area forecast. The 2015 to 2024 period is expected to improve NEL by an average growth rate of 1.5 percent per year matching the rate of customer growth. Going forward, projected NEL growth continues to reflect the FPSC approved DSM energy savings targets.

Summer net firm demand declined an average 0.7 percent per year during the last ten years, mostly driven by lower wholesale load that was only 33% below the average of the previous nine summers. The projected ten year period summer net firm demand growth rate of 1.6 percent is primarily driven by higher population improving net firm retail demand and significantly less drag from the wholesale sector.

ENERGY CONSUMPTION AND DEMAND FORECAST SCHEDULES

The below schedules have been provided:

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 Base Summer Peak Demand (MW)
3.2	History and Forecast of Base Winter Peak Demand (MW)
3.3	History and Forecast of Base Annual Net Energy for Load (GWh)
4	Previous Year Actual and Two-Year Forecast of Peak Demand and Net Energy for Load by Month

DUKE 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	DEF POPULATION	MEMBERS PER HOUSEHOLD	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER
2005	3,427,860	2.454	19,894	1,397,012	14,240	11,945	161,001	74,190
2006	3,505,058	2.448	20,021	1,431,743	13,983	11,975	162,774	73,568
2007	3,531,483	2.448	19,912	1,442,853	13,800	12,184	162,837	74,821
2008	3,561,727	2.458	19,328	1,449,041	13,339	12,139	162,569	74,669
2009	3,564,937	2.473	19,399	1,441,325	13,459	11,883	161,390	73,632
2010	3,621,407	2.495	20,524	1,451,466	14,140	11,896	161,674	73,579
2011	3,623,813	2.495	19,238	1,452,454	13,245	11,892	162,071	73,374
2012	3,633,620	2.491	18,251	1,458,690	12,512	11,723	163,297	71,792
2013	3,681,835	2.493	18,508	1,477,164	12,529	11,718	163,671	71,594
2014	3,701,245	2.485	19,003	1,489,502	12,758	11,789	165,899	71,060
2015	3,760,148	2.471	19,388	1,521,581	12,742	11,974	169,462	70,659
2016	3,794,503	2.457	19,521	1,544,672	12,638	12,095	172,049	70,300
2017	3,836,847	2.446	19,898	1,568,777	12,684	12,334	174,744	70,583
2018	3,882,632	2.437	20,068	1,593,408	12,594	12,443	177,495	70,103
2019	3,936,092	2.433	20,254	1,618,125	12,517	12,548	180,253	69,613
2020	3,991,020	2.430	20,489	1,642,516	12,474	12,758	182,973	69,726
2021	4,044,019	2.427	20,717	1,666,272	12,433	12,910	185,622	69,550
2022	4,095,523	2.424	20,950	1,689,354	12,401	13,071	188,195	69,455
2023	4,145,499	2.422	21,210	1,711,831	12,390	13,239	190,700	69,423
2024	4,195,255	2.420	21,453	1,733,788	12,373	13,396	193,146	69,357

DUKE 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
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	3,243	2,408	1,346,761	0	25	3,200	37,598
2012	3,160	2,372	1,332,209	0	25	3,221	36,381
2013	3,206	2,370	1,352,743	0	25	3,159	36,616
2014	3,267	2,328	1,403,351	0	25	3,157	37,240
2015	3,350	2,251	1,488,227	0	24	3,202	37,938
2016	3,355	2,228	1,505,835	0	24	3,214	38,209
2017	3,356	2,208	1,519,928	0	24	3,234	38,846
2018	3,316	2,189	1,514,847	0	24	3,247	39,098
2019	3,416	2,172	1,572,744	0	23	3,255	39,496
2020	3,450	2,157	1,599,444	0	23	3,278	39,998
2021	3,395	2,143	1,584,228	0	23	3,304	40,349
2022	3,340	2,131	1,567,339	0	22	3,335	40,718
2023	3,282	2,120	1,548,113	0	22	3,362	41,115
2024	3,223	2,110	1,527,488	0	22	3,388	41,482

DUKE 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
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	2,712	2,180	42,490	25,228	1,642,161
2012	1,768	3,065	41,214	25,480	1,649,839
2013	1,488	2,668	40,772	13,548	1,656,753
2014	1,333	2,402	40,975	25,725	1,683,454
2015	955	2,533	41,426	26,121	1,719,415
2016	1,107	2,631	41,947	26,480	1,745,429
2017	1,230	2,289	42,365	26,863	1,772,592
2018	1,234	2,447	42,779	27,261	1,800,353
2019	1,408	2,668	43,572	27,666	1,828,216
2020	1,539	2,532	44,069	28,071	1,855,717
2021	1,529	2,444	44,322	28,471	1,882,508
2022	1,530	2,433	44,681	28,859	1,908,539
2023	1,530	2,435	45,080	29,238	1,933,889
2024	1,534	2,528	45,544	29,607	1,958,651

DUKE 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
2005	10,350	1,118	9,232	448	310	203	38	166	110	9,074
2006	10,147	1,257	8,890	329	307	222	37	170	66	9,016
2007	10,931	1,544	9,387	334	291	239	45	177	110	9,735
2008	10,592	1,512	9,080	500	284	255	66	192	110	9,186
2009	10,853	1,618	9,235	262	291	271	84	211	110	9,624
2010	10,242	1,272	8,970	271	304	298	96	234	110	8,929
2011	9,972	934	9,038	227	317	329	97	256	110	8,636
2012	9,788	1080	8,708	262	328	358	98	280	124	8,337
2013	9,581	581	9,000	317	341	382	101	298	124	8,017
2014	10,067	807	9,260	232	355	404	108	313	132	8,523
2015	10,532	812	9,720	247	363	421	113	324	132	8,932
2016	10,619	647	9,972	247	369	436	118	331	132	8,986
2017	10,905	751	10,154	252	375	449	122	338	132	9,237
2018	11,074	752	10,322	242	381	460	126	343	132	9,390
2019	11,528	1,004	10,524	266	387	468	130	348	132	9,797
2020	11,744	1,005	10,739	303	393	480	135	352	132	9,948
2021	11,667	755	10,912	304	399	491	139	355	132	9,847
2022	11,835	755	11,080	304	405	501	143	357	132	9,993
2023	11,996	755	11,241	304	411	510	148	358	132	10,133
2024	12,155	755	11,400	303	417	519	152	359	132	10,273

Historical Values (2005 - 2014):

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 (2015 - 2024):

Cols. (2) - (4) = forecasted peak without load control, cumulative 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).

DUKE 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
2004/05	10,828	1,600	9,228	575	779	368	26	124	283	8,673
2005/06	10,695	1,467	9,228	298	762	409	26	125	239	8,835
2006/07	9,894	1,576	8,318	304	671	450	26	127	262	8,055
2007/08	10,962	1,828	9,134	234	763	483	34	133	278	9,036
2008/09	12,089	2,229	9,860	268	759	518	71	148	291	10,034
2009/10	13,694	2,189	11,505	246	651	563	80	163	322	11,670
2010/11	11,343	1,625	9,718	271	661	628	94	180	221	9,288
2011/12	9,721	905	8,816	186	643	686	96	203	206	7,701
2012/13	9,109	831	8,278	287	652	747	97	220	213	6,893
2013/14	9,467	646	8,821	257	654	785	101	229	219	7,222
FORECAST:										
2014/15	11,793	1,381	10,411	224	668	820	109	238	247	9,487
2015/16	11,969	1,344	10,625	224	679	856	113	238	249	9,609
2016/17	11,975	1,197	10,778	229	690	890	118	239	251	9,558
2017/18	12,119	1,198	10,921	219	701	919	122	240	252	9,666
2018/19	12,296	1,198	11,098	241	712	943	126	240	254	9,779
2019/20	12,735	1,448	11,287	275	723	972	130	241	256	10,138
2020/21	12,735	1,299	11,436	276	734	999	135	241	257	10,093
2021/22	12,881	1,299	11,582	276	745	1,025	139	241	259	10,196
2022/23	13,024	1,299	11,725	276	756	1,049	143	242	260	10,298
2023/24	13,161	1,299	11,862	275	767	1,072	147	242	262	10,396

Historical Values (2005 - 2014):

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 (2015 - 2024):

Cols. (2) - (4) = forecasted peak without load control, cumulative conservation, and customer-owned self-service cogeneration.

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).

DUKE 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 (%) **
2005	48,475	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	558	779	38,925	3,493	3,742	46,160	45.3
2011	44,580	687	624	779	37,597	2,712	2,181	42,490	46.7
2012	43,396	733	669	780	36,381	1,768	3,065	41,214	52.0
2013	43,142	772	734	864	36,616	1,488	2,668	40,772	53.0
2014	43,442	812	791	864	37,240	1,333	2,402	40,975	50.7
FORECAST:									
2015	43,986	838	809	913	36,491	936	3,999	41,426	49.8
2016	44,549	861	825	916	36,948	974	4,025	41,947	49.7
2017	44,999	882	839	913	37,584	1,024	3,757	42,365	50.6
2018	45,443	899	852	913	38,073	795	3,911	42,779	50.5
2019	46,259	912	862	913	38,624	767	4,181	43,572	50.9
2020	46,777	921	871	916	39,350	1,046	3,673	44,069	49.5
2021	47,040	928	877	913	39,983	1,270	3,069	44,322	50.1
2022	47,406	931	881	913	40,404	1,243	3,034	44,681	50.0
2023	47,812	934	885	913	40,991	1,244	2,845	45,080	50.0
2024	48,283	935	888	916	41,469	1,244	2,831	45,544	49.9

* 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, 2007, 2012 - 2014 historical load factors which are based on the actual summer peak demand which became the annual peaks for the year.
Load Factors for future years are calculated using the net firm winter peak demand (Schedule 3.2)

DUKE 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 2014		FORECAST 2015		FORECAST 2016	
MONTH	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh
JANUARY	8,329	3,407	10,603	3,123	10,743	3,153
FEBRUARY	6,972	2,648	8,860	2,753	9,159	2,864
MARCH	5,203	2,977	8,005	2,958	8,042	2,949
APRIL	7,514	3,049	8,047	3,028	8,169	3,050
MAY	7,996	3,637	8,805	3,653	8,913	3,697
JUNE	8,608	3,877	9,356	3,963	9,322	4,017
JULY	8,049	4,166	9,412	4,210	9,397	4,268
AUGUST	9,218	4,379	9,655	4,313	9,720	4,356
SEPTEMBER	8,372	3,725	8,908	3,976	8,875	4,019
OCTOBER	8,031	3,333	8,302	3,496	8,272	3,558
NOVEMBER	6,862	2,807	7,093	2,868	7,065	2,911
DECEMBER	6,408	2,970	8,885	3,085	8,783	3,105
TOTAL		40,975		41,426		41,947

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

FUEL REQUIREMENTS AND ENERGY SOURCES

DEF's actual and projected nuclear, coal, oil, and gas requirements (by fuel unit) are shown in Schedule 5. DEF'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. DEF'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 and natural gas generation costs reflect relatively attractive natural gas commodity pricing.

DUKE 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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
(1)	NUCLEAR		TRILLION BTU	0	0	0	0	0	0	0	0	0	0	0	0
(2)	COAL		1,000 TON	4,792	5,176	4,072	3,588	3,540	2,667	3,370	2,285	2,325	2,391	2,614	2,531
(3)	RESIDUAL	TOTAL	1,000 BBL	251	0	0	0	0	0	0	0	0	0	0	0
(4)		STEAM	1,000 BBL	251	0	0	0	0	0	0	0	0	0	0	0
(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	132	167	114	102	85	102	108	105	99	102	124	110
(9)		STEAM	1,000 BBL	55	55	47	56	51	45	37	56	61	54	59	50
(10)		CC	1,000 BBL	8	0	0	0	0	0	0	0	0	0	0	0
(11)		CT	1,000 BBL	69	112	67	46	34	57	71	49	39	48	65	60
(12)		DIESEL	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(13)	NATURAL GAS	TOTAL	1,000 MCF	177,196	182,286	193,425	204,169	223,430	237,360	235,269	252,884	252,638	253,663	252,171	264,768
(14)		STEAM	1,000 MCF	23,404	32,855	28,164	27,199	25,797	19,345	19,223	15,624	16,277	16,315	16,346	15,770
(15)		CC	1,000 MCF	150,875	144,737	158,027	170,803	192,150	212,024	210,806	232,559	231,765	232,858	230,788	238,830
(16)		CT	1,000 MCF	2,917	4,694	7,234	6,168	5,482	5,991	5,241	4,701	4,595	4,490	5,037	10,167
	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	24,407	27,509	12,380	9,649	2,379	3,861	4,367	3,844	4,615	4,983
(18.1)	OTHER, NATURAL GAS	ANNUAL FIRM INTERCHANGE, CT	1,000 MCF	N/A	N/A	9,430	7,693	6,801	7,973	6,245	4,283	4,452	4,747	4,968	2,019
(19)	OTHER, COAL	ANNUAL FIRM INTERCHANGE, STEAM	1,000 TON	N/A	N/A	184	87	0	0	0	0	0	0	0	0

DUKE 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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
(1)	ANNUAL FIRM INTERCHANGE 1/		GWh	1,409	1,755	2,890	2,938	636	744	583	400	415	442	464	183
(2)	NUCLEAR		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(3)	COAL		GWh	10,577	11,760	8,583	7,386	7,251	5,422	7,125	4,653	4,760	4,910	5,374	5,214
(4)	RESIDUAL	TOTAL	GWh	127	0	0	0	0	0	0	0	0	0	0	0
(5)		STEAM	GWh	127	0	0	0	0	0	0	0	0	0	0	0
(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	93	38	27	18	13	23	28	20	16	19	25	24
(10)		STEAM	GWh	58	0	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWh	7	0	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWh	28	38	27	18	13	23	28	20	16	19	25	24
(13)		DIESEL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(14)	NATURAL GAS	TOTAL	GWh	23,061	22,962	25,477	26,991	29,696	32,177	32,351	35,119	35,044	35,213	34,977	36,559
(15)		STEAM	GWh	1,951	2,931	2,339	2,216	2,057	1,407	1,458	1,048	1,100	1,126	1,117	1,064
(16)		CC	GWh	20,893	19,674	22,486	24,208	27,122	30,227	30,420	33,615	33,496	33,654	33,381	34,541
(17)		CT	GWh	217	357	652	567	516	543	473	456	448	433	479	954
(18)	OTHER 2/														
	QF PURCHASES		GWh	2,886	1,654	1,570	1,684	1,746	1,745	1,742	1,747	1,745	1,743	1,662	734
	RENEWABLES OTHER		GWh	1,132	23	0	0	0	0	0	0	0	0	0	0
	RENEWABLES MSW				708	578	569	605	605	605	607	605	605	605	607
	RENEWABLES BIOMASS				196	656	663	692	692	692	694	692	692	692	694
	RENEWABLES SOLAR				0	3	21	40	59	121	305	451	532	653	851
	IMPORT FROM OUT OF STATE		GWh	1,546	1,958	1,641	1,677	1,685	1,312	324	525	594	523	628	678
	EXPORT TO OUT OF STATE		GWh	-59	-79	0	0	0	0	0	0	0	0	0	0
(19)	NET ENERGY FOR LOAD		GWh	40,772	40,975	41,426	41,947	42,365	42,779	43,572	44,069	44,322	44,681	45,080	45,543

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

DUKE 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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
(1)	ANNUAL FIRM INTERCHANGE 1/		%	3.8%	4.3%	7.0%	7.0%	1.5%	1.7%	1.3%	0.9%	0.9%	1.0%	1.0%	0.4%
(2)	NUCLEAR		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(3)	COAL		%	24.3%	28.7%	20.7%	17.6%	17.1%	12.7%	16.4%	10.6%	10.7%	11.0%	11.9%	11.4%
(4)	RESIDUAL	TOTAL	%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(5)		STEAM	%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(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	%	0.3%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%
(10)		STEAM	%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(11)		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(12)		CT	%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%
(13)		DIESEL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(14)	NATURAL GAS	TOTAL	%	58.2%	56.0%	61.5%	64.3%	70.1%	75.2%	74.2%	79.7%	79.1%	78.8%	77.6%	80.3%
(15)		STEAM	%	5.3%	7.2%	5.6%	5.3%	4.9%	3.3%	3.3%	2.4%	2.5%	2.5%	2.5%	2.3%
(16)		CC	%	52.1%	48.0%	54.3%	57.7%	64.0%	70.7%	69.8%	76.3%	75.6%	75.3%	74.0%	75.8%
(17)		CT	%	0.9%	0.9%	1.6%	1.4%	1.2%	1.3%	1.1%	1.0%	1.0%	1.0%	1.1%	2.1%
(18)	OTHER 2/														
	QF PURCHASES		%	6.7%	4.0%	3.8%	4.0%	4.1%	4.1%	4.0%	4.0%	3.9%	3.9%	3.7%	1.6%
	RENEWABLES OTHER		%	2.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	RENEWABLES MSW				1.7%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	1.3%
	RENEWABLES BIOMASS				0.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.5%	1.5%	1.5%
	RENEWABLES SOLAR				0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.7%	1.0%	1.2%	1.4%	1.9%
	IMPORT FROM OUT OF STATE		%	3.8%	4.8%	4.0%	4.0%	4.0%	3.1%	0.7%	1.2%	1.3%	1.2%	1.4%	1.5%
	EXPORT TO OUT OF STATE		%	0.0%	-0.2%	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 consumption over the planning horizon. DEF's forecasting framework utilizes a set of econometric models as well as the Itron statistically adjusted end-use (SAE) approach 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 and a review of DEF's DSM programs.

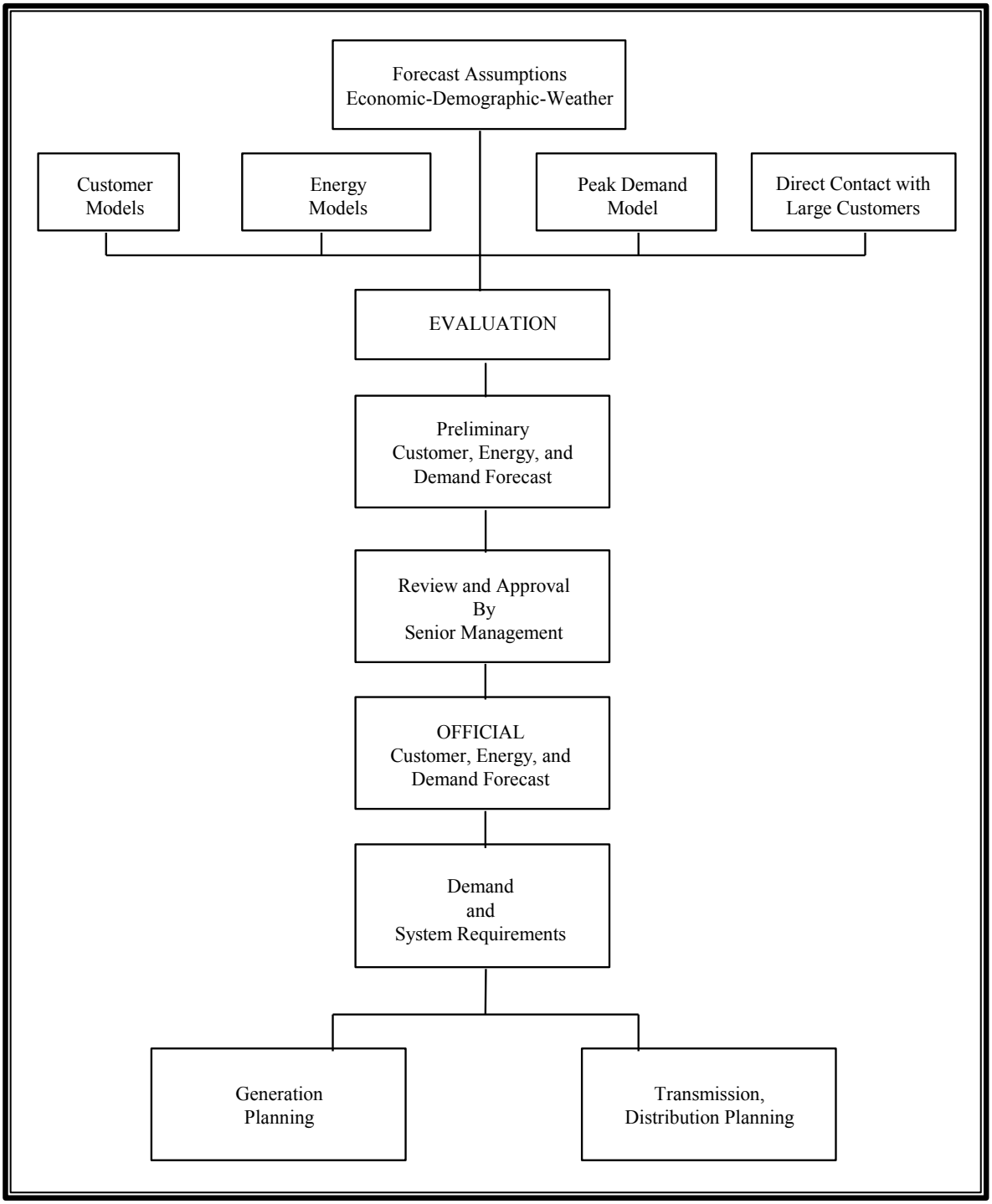
Figure 2.1, entitled "Customer, Energy and Demand Forecast," gives a general description of DEF's forecasting process. Highlighted in the diagram is a disaggregated modeling approach that blends the impacts of average class usage, as well as customer growth, based on a specific set of assumptions for 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. A collaborative internal Company effort develops these assumptions including 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 10-year average of conditions at the St Petersburg, Orlando, and Tallahassee weather stations. For billed kilowatt-hour (kWh) sales projections, the normal weather calculation begins with a historical 10-year average of the billing cycle weighted monthly heating and cooling degree-days. The expected consumption period read dates for each projected billing cycle determines the exact historical dates for developing the ten year average weather condition each month. Each class displays different weather-sensitive base temperatures from which degree day values begin to accumulate. Seasonal peak demand projections are based on a 30-year historical average of system-weighted temperatures at time of seasonal peak at the same three weather stations. The remaining non-seasonal peak months of the year may use less than 30 years if an historical monthly peak occurred due to unusual weather.

2. DEF customer forecast is based upon historical population estimates and produced by the BEBR at the University of Florida (as published in "Florida Population Studies", Bulletin No. 65 March 2014) and provides the basis for the 29 county population forecast used in the development of the DEF customer forecast. National and Florida economic projections produced by Moody's Analytics in their July 2014 forecast, along with EIA 2014 surveys of residential appliance saturation and average appliance efficiency levels provided the basis for development of the DEF energy forecast.

3. Within the DEF service area, the phosphate mining industry is the dominant sector in the industrial sales class. Three major customers accounted for nearly 32 percent of the industrial class MWh sales in 2014. These energy intensive customers mine and process phosphate-based fertilizer products for the global marketplace. The supply and demand (price) 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. The market price of the raw mined commodity often dictates production levels. Load and energy consumption at the DEF-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,

global currency fluctuations and global stockpiles of farm commodities will determine the demand for fertilizers. The DEF forecast calls for a continuation of the depressed level of annual electric energy consumption experienced in 2014 due to a mine shutdown brought about by the merger of two mining customers. Also, the current strength of U.S. Dollar makes all domestic production less price competitive at home and abroad. The forecast does account for one customer's intention to open a new mine later in this decade. A risk to this projection lies in the price of energy, which is a major cost in mining and producing phosphoric fertilizers.

4. DEF supplies load and energy service to wholesale customers on a "full" and "partial" requirement basis. Full requirements (FR) customers demand and energy are assumed to grow at a rate that approximates their historical trend. Contracts for this service include the cities of Chattahoochee, Mt. Dora and Williston. Partial requirements (PR) customers 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 Improvement District (RCID), Seminole Electric Cooperative, Inc. (SECI), and the cities of New Smyrna Beach and Homestead.

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

6. This forecast incorporates demand and energy reductions expected to be realized through currently FPSC approved DSM targets as stated in Docket No. 130200-EI .

7. Expected energy and demand reductions from customer-owned self-service cogeneration facilities are also included in this forecast. DEF will supply the supplemental load of self-service cogeneration customers. While DEF 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. FR

customers are typically assumed to renew their contracts with DEF except those who have termination provisions and have given their notice to terminate. PR contracts are typically projected to terminate as terms reach their expiration date.

ECONOMIC ASSUMPTIONS

The economic outlook for this forecast was developed in the Fall of 2014 as the nation's economy appeared to display stronger signs of growth. Most economic indicators pointed to significant year-over-year improvements. These included strong employment growth and declining unemployment, lower home foreclosures, moderately higher construction levels and much improved consumer confidence. Nationally, energy prices were declining, along with interest rates, and consumers were spending (and borrowing) again. What was not reported, however, were gains in median household incomes (after inflation) and improvement in the rate of homeownership. Both may be the result of a prolonged impact from the Great Recession where an oversupply of labor forced down wage rates, increased the number of lower paid part-time positions, damaged personal credit histories for many potential homebuyers and severely restricted mortgage credit compared to levels reached in the pre-financial crisis period.

In Florida, statewide job growth was among the highest nationally. In 2014, the State became the third most populous in the nation, according to the U.S. Census Bureau. Construction cranes could be seen again in almost every direction. Tourism levels have returned, boosting the vibrancy of the local economies. Public sector tax receipts have improved, allowing this sector to become a positive force on aggregate demand in the economy after many years in decline.

The DEF forecast incorporates the economic assumptions implied in the Moody's Analytics U.S. and Florida forecasts with some minor tempering to its short term optimism. This view suggests that the de-leveraging American consumer has begun to spend again, feeling more secure about the future. The newfound abundance of American energy supplies will improve tourism travel, both by air and car. Finally, low oil and natural gas prices, are expected to improve the country's competitive advantage in several manufacturing sectors. A tempering of this optimistic picture must be applied by recognizing the number of weak economies around the globe and the amount of excess capacity available to out-bid American producers in a strong USD World. Gains will come

from service-related sectors in which the Florida economy does well. The State economy will benefit from more spending in health care and the retiring baby-boom generation. An improvement in the State's building products and infrastructure manufacturers has already begun. Throughout the ten year forecast horizon, risks and uncertainties are always recognized and handled on a "highest probability of outcome" basis. General rules of economic theory, namely, supply and demand equilibrium are maintained in the long run. This notion is applied to energy/commodity prices, currency levels, the housing market, wage rates, inflation and interest rates. Uncertainty surrounding international crises, such as wars or terrorist acts, are not explicitly designed into this projection. Thus, any situations of this variety will force a deviation from the forecast.

Also incorporated in this energy forecast is a projection of customer-owned solar photovoltaic generation and electric vehicle ownership. The net energy impact of both are expected to result in only marginal impacts to the forecasted energy growth.

FORECAST METHODOLOGY

The DEF forecast of customers, energy sales, and peak demand applies both an econometric and end-use methodology. The residential and commercial energy projections incorporate Itron's SAE approach while other classes use customer class-specific econometric models. These models are expressly designed to capture class-specific variation over time. 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, interruptible service and changes in self-service generation capacity.

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 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 Analytics 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. The incorporation of residential and commercial "end-use" energy have been modeled as well. Surveys of residential appliance saturation and average efficiency performed by the company's Market Research department and the Energy Information Agency (EIA), along with trended projections of both by Itron capture a significant piece of the changing future environment for electric energy consumption. Specific sectors are modeled as follows:

Residential Sector

Residential kWh usage per customer is modeled using the SAE framework. This approach explicitly introduces trends in appliance saturation and efficiency, dwelling size and thermal efficiency. It allows for an easier explanation of usage levels and changes in weather-sensitivity over time. The "bundling" of 19 residential appliances into "heating", "cooling" and "other" end uses form the basis of equipment-oriented drivers that interact with typical exogenous factors such as real median household 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 structure captures significant variation in residential usage caused by changing appliance efficiency and saturation levels, economic cycles, weather fluctuations, electric price, 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 monthly residential customers with households within DEF's 29-county service area. County level population projections for counties in which DEF 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. As in the residential sector, these variables are interacted with the commercial end-use equipment (listed below) after trends in equipment efficiency and saturation rates have been projected.

- Heating

- Cooling
- Ventilation
- Water heating
- Cooking
- Refrigeration
- Outdoor Lighting
- Indoor Lighting
- Office Equipment (PCs)
- Miscellaneous

The SAE model contains indices that are based on end-use energy intensity projections developed from EIA's commercial end-use forecast database. Commercial energy intensity is measured in terms of end-use energy use per square foot. End-use energy intensity projections are based on end-use efficiency and saturation estimates that are in turn driven by assumptions in available technology and costs, energy prices, and economic conditions. Energy intensities are calculated from the EIA's Annual Energy Outlook (AEO) commercial database. End-use intensity projections are derived for eleven building types. The energy intensity (EI) is derived by dividing end-use electricity consumption projections by square footage:

$$EI_{bet} = Energy_{bet} / sqft_{bt}$$

Where:

$Energy_{bet}$ = energy consumption for building type b, end-use e, year t

$Sqft_{bt}$ = square footage for building type b in year t

Commercial customers are modeled using the projected level of residential customers.

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 interacted with the Florida industrial production index, 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 three customers, the forecast is dependent upon information received from direct customer contact. DEF 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. The projection of industrial accounts are expected to continue its historic decline. The decline in manufacturing nationwide, the increased competitiveness between the states, mergers between companies within the state, all have resulted in a continued decline in customer growth for this class.

Street Lighting

Electricity sales to the street and highway lighting class have remained flat for years but have declined of late. A continued decline is expected as improvements in lighting efficiency are projected. The number of accounts, which has dropped by more than one-third since 1995 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 of federal, state and local government operated services, is also projected to grow within the size of DEF's service area. The level of government services, and thus energy, can be tied to the population base, as well as the amount of tax revenue collected to pay for these services. Factors affecting population growth will affect the need for additional governmental services (i.e. public schools, city services, etc.) thereby increasing SPA energy consumption. Government employment has been determined to be the best indicator of the level of government services provided. This variable, along with cooling degree-days and the sales month billing days, results in a significant level of explained variation over the historical sample period. Adjustments are also included in this model to account for the large change in school-

related energy use throughout the year . The SPA customer forecast is projected linearly as a function of a time-trend. Recent budget issues have also had an impact on the near-term pace of growth.

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).

SECI is a wholesale, or sales for resale, customer of DEF that contracts for both seasonal and stratified loads over the forecast horizon. 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 customers in this class, Chattahoochee, Mt. Dora, and Williston, are municipalities whose full energy requirements are supplied by DEF. Energy projections for full requirement customers grow at a rate that approximates their historical trend with additional information coming from the respective city officials. DEF serves partial requirement service (PR) to municipalities such as New Smyrna Beach, Homestead, and another power provider, RCID. In each case, these customers contract with DEF for a specific level and type of stratified capacity 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 and expected fuel prices.

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, DEF's coincident system peak is separated into five major components. These components consist of potential firm retail load, interruptible and curtailable tariff non-firm load, conservation and load management program capability, wholesale demand, company use demand, and interruptible demand.

Potential firm retail load refers to projections of DEF retail hourly seasonal net peak demand (excluding the non-firm interruptible/curtailable/standby services) before any historical activation of DEF's General Load Reduction Plan. The historical values of this series are constructed to show the size of DEF's firm retail net peak demand assuming no utility activated load control had ever 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 retail customer levels and coincident weather conditions at the time of the peak without the impacts of year-to-year variation in load control reductions. Seasonal peaks are projected using the historical seasonal peak hour 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 DEF'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 firm retail monthly peak demand figures.

Sales for Resale demand projections represent load supplied by DEF to other electric suppliers such as SECI, RCID, and other electric transmission and distribution entities. For Partial Requirement demand projections, contracted MW 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.

DEF "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 DEF'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

On August 16, 2011, the PSC issued Order No. PSC-11-0347-PAA-EG, Modifying and Approving the Demand Side Management Plan of DEF (formerly known as Progress Energy Florida, Inc.). In this Order, the FPSC modified DEF's DSM Plan to consist of those existing programs in effect as of the date of the Order.

The following tables show the 2010 through 2014 achievements from DEF's existing set of DSM programs.

Residential Conservation Savings Cumulative Achievements

Year	Summer MW	Winter MW	GWh Energy
	Achieved	Achieved	Achieved
2010	44	85	58
2011	83	160	111
2012	118	233	159
2013	144	281	200
2014	169	322	243

Commercial Conservation Savings Cumulative Achievements

Year	Summer MW	Winter MW	GWh Energy
	Achieved	Achieved	Achieved
2010	36	31	66
2011	65	61	132
2012	94	82	199
2013	121	103	243
2014	157	133	300

Total Conservation Savings Cumulative Achievements

Year	Summer MW	Winter MW	GWh Energy
	Achieved	Achieved	Achieved
2010	80	116	124
2011	148	221	243
2012	212	315	358
2013	265	384	442
2014	326	455	542

DEF'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 that will continue to be offered through 2015. 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. A brief description of each of the currently offered DSM programs is provided below.

In 2012, DEF received administrative approval of revisions to four programs as a result of changes to the Florida Building Code: Home Energy Improvement, Residential New Construction, Business New Construction and Better Business. The Building Code changes resulted in increased minimum efficiency levels which resulted in an increase in the baseline efficiency level from which DEF provides incentives. The revisions to the four programs are incorporated in the descriptions below.

In 2013, the increased efficiency standards impacted participation in DEF's approved DSM programs as measures that previously were eligible for incentives became required standards ineligible for incentives. The higher performance requirements established by the changes to the Florida Building Code, along with the state and federal minimum efficiency standards for residential appliances and commercial equipment, resulted in a reduction of demand and energy savings from DEF's DSM programs. As the U.S. Department of Energy (DOE) continues the implementation of increased energy efficiency standards for residential and commercial end-uses, the amount of demand and energy savings captured by DEF's DSM programs will decrease. On March 16, 2015, DEF submitted new programs to the PSC designed to meet the

goals established in Docket Number 130200-EI. If the new programs are approved by the Commission this year, DEF will reflect the changed programs, and resulting demand and energy savings, in its next TYSP filing.

DEF's CURRENTLY APPROVED DSM PROGRAMS:

RESIDENTIAL PROGRAMS

Home Energy Check

This energy audit program provides residential customers with an analysis of their current energy use and provides 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 currently offers DEF 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); and 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

The Home Energy Improvement Program is the umbrella program that serves to increase energy efficiency for existing residential homes. All residential customers are eligible to participate in this program. The program includes a cost-effective and comprehensive portfolio of measures across all housing types designed to provide customer energy savings and reduce system demand.

The program provides incentives for a number of energy conservation measures including attic insulation upgrades, duct testing and repair, and high efficiency electric heat pumps.

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 DEF 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 DEF's option, during specified time periods, and coincident with hours of peak demand. Participating customers receive a monthly credit on their electricity bills prorated for usage in excess of 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. 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 are available 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 DEF 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 DEF representatives during a Business Energy Check audit. If a candidate project meets program specifications, it may be eligible for an incentive payment, subject to DEF approval.

Commercial Energy Management (Rate Schedule GSLM-1)

This direct load control program reduces DEF's demand during peak or emergency conditions. As described in DEF'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 structures and utilized for the following purposes: 1) water heater(s), 2) central electric heating system(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 DEF'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 DEF 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 DEF's request.

Interruptible Service

This direct load control program reduces DEF'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. DEF 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 load control program reduces DEF's demand at times of capacity shortage during peak or emergency conditions. The program is available to qualified non-residential customers who are willing to curtail 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. DEF will undertake certain development, educational and demonstration projects that have potential to become DSM programs. Examples of projects included in this program 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. DEF collaborates with non-profit builders to provide low-income families with a residential solar thermal water heater. The solar thermal system is provided at no cost to the non-profit builders or the residential participants.

Solar Water Heating with Energy Management

This pilot program 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 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.

Residential Solar Photovoltaic Pilot

This pilot encourages residential customers to install new solar photovoltaic (PV) systems on their home. A DEF audit is required prior to system installation to qualify for this rebate. Participating customers will receive a one-time 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.

Commercial Solar Photovoltaic Pilot

This pilot encourages commercial customers to install new solar PV systems on their facilities. A DEF 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.

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 DEF's system
- Increase participation in existing residential Demand Side Management measures through energy education
- Increase solar education and awareness in DEF 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 pilot program is to research technology and establish Research and Design 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.

(Blank Page)

CHAPTER 3

FORECAST OF FACILITIES REQUIREMENTS

CHAPTER 3

FORECAST OF FACILITIES REQUIREMENTS

RESOURCE PLANNING FORECAST

OVERVIEW OF CURRENT FORECAST

Supply-Side Resources

As of December 31, 2014 DEF had a summer total capacity resource of 11,408 MW (see Table 3.1). This capacity resource includes fossil steam generators (3,460 MW), combined-cycle plants (3,222 MW), combustion turbines (2,472 MW; 143 MW of which is owned by Georgia Power for the months June through September), utility purchased power (413 MW), independent power purchases (1,360 MW), and non-utility purchased power (481 MW). Table 3.2 presents DEF'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

DEF's forecasts of capacity and demand for the projected summer and winter peaks can been found in Schedules 7.1 and 7.2, respectively. DEF'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 DEF. In its planning process, DEF 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

DEF's planned supply resource additions and changes are shown in Schedule 8 and are referred to as DEF's Base Expansion Plan. This plan includes summer capacity uprates at the Hines Energy Center through the installation of Inlet Chilling, a combined cycle facility in 2018 in Citrus County, a purchase and proposed acquisition of the Calpine Osprey Energy Combined Cycle

Unit in Auburndale and four planned Combustion Turbine Units at an undesignated site(s) in 2024. DEF continues to seek market supply-side resource alternatives to enhance DEF's resource plan and has extended a purchase power agreement with Southern Power Company beginning in 2016. In addition to total summer existing capacity resources provided above, DEF is planning to install 500 MW of solar PV over the next 10 year period as an energy resource.

The promulgation of the Mercury and Air Toxics Standards (MATS) by EPA in April of 2012 presents new environmental requirements for the DEF units at Anclote, Suwannee and Crystal River.

- Two steam units at Anclote and three steam units at Suwannee have switched to natural-gas-only operations in order to comply with the MATS rule. Residual Fuel Oil is no longer available at these two sites.
- Crystal River Units 1 and 2 are not capable of meeting the emissions requirements for MATS in their current configuration and using the current fuel. In addition, under the terms of the revised air permit, in accordance with the State Implementation Plan for compliance with the requirements of the Clean Air Visible Haze Rule, these units are required to cease coal fired operation by the end of 2020 unless scrubbers are installed prior to the end of 2018.
- DEF has received a one year extension of the deadline to comply with MATS for Crystal River Units 1 and 2 from the Florida Department of Environmental Protection. This extension was granted to provide DEF sufficient time to complete projects necessary to enable interim operation of those units in compliance with MATS during the 2016 – 2020 period.
- DEF anticipates burning MATS compliance coals in Crystal River Units 1 and 2 beginning no later than April 2016. Although specific dates have not been finalized, DEF anticipates retiring the Crystal River Units 1 and 2 in 2018 in coordination with the 2018 Citrus Combined Cycle operations.
- DEF has received a one year extension of the deadline to comply with MATS for Crystal River Units 4 and 5 from the Florida Department of Environmental Protection. This extension to provide DEF sufficient time to complete projects necessary to enable long term operation of these units in compliance with the MATS.

- Additional details regarding DEF's compliance strategies in response to the MATS rule are provided in DEF's annual update to the Integrated Clean Air Compliance Plan filed in Docket No. 150007-EI.

DEF continues to look ahead to the projected retirements of several of the older units in the fleet, particularly combustion turbines at Higgins, Avon Park, Turner and Rio Pinar as well as the three steam units at Suwannee. Turner Unit P3 is anticipated to retire in July 2015. The Avon Park, Rio Pinar and Turner Units P1, P2 and P4 continue to show anticipated retirement dates in 2016. Suwannee steam units1 and 2 are projected to retire by the summer of 2017, and Suwannee Steam unit 3 is projected to retire by the summer of 2018. Continued operations of the peaking units at Higgins are planned until the year 2020. There are many factors which may impact these retirements including environmental regulations and permitting, the unit's age and maintenance requirements, local operational needs, their relatively small capacity size and system requirement needs.

DEF's Base Expansion Plan projects the need for additional capacity with proposed in-service dates during the ten-year period from 2015 through 2024. The planned capacity additions, together with purchases from Qualifying Facilities (QF), Investor Owned Utilities, and Independent Power Producers help the DEF system meet the energy requirements of its customer base. The capacity needs identified in this plan may be impacted by DEF's ability to extend or replace existing purchase power, cogeneration and QF contracts and to secure new renewable purchased power resources in their respective projected timeframes. The additions in the Base Expansion Plan 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 DEF's Base Expansion Plan. Status reports and specifications for the planned new generation facilities are included in Schedule 9. The planned transmission lines associated with DEF Bulk Electric System (BES) are shown in Schedule 10.

TABLE 3.1

DUKE ENERGY FLORIDA

TOTAL CAPACITY RESOURCES OF
POWER PLANTS AND PURCHASED POWER CONTRACTS

AS OF DECEMBER 31, 2014

PLANTS	NUMBER OF UNITS	SUMMER NET DEPENDABLE CAPABILITY (MW)	
Fossil Steam			
Crystal River	4	2,291	
Anclote	2	1,041	
Suwannee River	3	128	
Total Fossil Steam	9	3,460	
Combined Cycle			
Bartow	1	1,105	
Hines Energy Complex	4	1,912	
Tiger Bay	1	205	
Total Combined cycle	6	3,222	
Combustion Turbine			
DeBary	10	637	
Intercession City	14	984	*(1)*
Bayboro	4	174	
Bartow	4	175	
Suwannee	3	155	
Turner	4	132	
Higgins	4	109	
Avon Park	2	48	
University of Florida	1	46	
Rio Pinar	1	12	
Total Combustion Turbine	47	2,472	
Total Units	**62**		
Total Net Generating Capability		**9,154**	

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

Purchased Power			
Firm Qualifying Facility Contracts	11	481	
Investor Owned Utilities	2	413	
Independent Power Producers	3	1,360	
TOTAL CAPACITY RESOURCES		**11,408**	

TABLE 3.2

DUKE ENERGY FLORIDA
FIRM RENEWABLES
AND COGENERATION CONTRACTS

AS OF DECEMBER 31, 2014

Facility Name	Firm Capacity (MW)
Mulberry	115
Orange Cogen (CFR-Biogen)	74
Orlando Cogen	115
Pasco County Resource Recovery	23
Pinellas County Resource Recovery 1	40
Pinellas County Resource Recovery 2	14.8
Ridge Generating Station	39.6
Florida Power Development	60
TOTAL	**481.4**

DUKE 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
2015	8,958	2,077	0	177	11,213	8,932	2,280	26%	0	2,280	26%
2016	8,908	2,119	0	177	11,205	8,987	2,218	25%	0	2,218	25%
2017	9,095	1,875	0	177	11,148	9,237	1,911	21%	0	1,911	21%
2018	9,104	1,975	0	177	11,257	9,390	1,867	20%	0	1,867	20%
2019	9,924	1,875	0	177	11,977	9,797	2,180	22%	0	2,180	22%
2020	10,146	1,875	0	177	12,199	9,948	2,251	23%	0	2,251	23%
2021	10,146	1,875	0	177	12,199	9,847	2,352	24%	0	2,352	24%
2022	10,146	1,875	0	177	12,199	9,992	2,207	22%	0	2,207	22%
2023	10,146	1,875	0	177	12,199	10,133	2,066	20%	0	2,066	20%
2024	10,958	1,280	0	177	12,416	10,272	2,144	21%	0	2,144	21%

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

DUKE 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 INSTALLED CAPACITY	FIRM[a] CAPACITY IMPORT	FIRM CAPACITY EXPORT	QF[b]	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
2014/15	10,120	2,162	0	177	12,459	9,487	2,972	31%	0	2,972	31%
2015/16	10,070	2,192	0	177	12,439	9,610	2,829	29%	0	2,829	29%
2016/17	9,997	1,960	0	177	12,134	9,559	2,575	27%	0	2,575	27%
2017/18	9,941	1,960	0	177	12,078	9,666	2,412	25%	0	2,412	25%
2018/19	10,945	1,960	0	177	13,082	9,780	3,302	34%	0	3,302	34%
2019/20	11,293	1,960	0	177	13,430	10,139	3,291	32%	0	3,291	32%
2020/21	11,177	1,960	0	177	13,314	10,094	3,220	32%	0	3,220	32%
2021/22	11,177	1,960	0	177	13,314	10,197	3,117	31%	0	3,117	31%
2022/23	11,177	1,960	0	177	13,314	10,298	3,016	29%	0	3,016	29%
2023/24	11,177	1,845	0	177	13,199	10,397	2,802	27%	0	2,802	27%

Notes:

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

b. QF includes Firm Renewables

DUKE ENERGY FLORIDA

SCHEDULE 8
PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

AS OF JANUARY 1, 2015 THROUGH DECEMBER 31, 2024

(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			
	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[a]	NOTES[b]
TURNER	3	VOLUSIA	GT							07/2015		(53)	(77)	RT	(1)
CRYSTAL RIVER	1	CITRUS	ST	BIT		RR	WA		04/2016			(50)	(52)	FC	(1)
CRYSTAL RIVER	2	CITRUS	ST	BIT		RR	WA		04/2016			(79)	(80)	FC	(1)
TURNER	P 1-2,4	VOLUSIA	GT							6/2016		(79)	(104)	RT	(1)
AVON PARK	P 1-2	HIGHLANDS	GT							6/2016		(48)	(70)	RT	(1)
RIO PINAR	P1	ORANGE	GT							6/2016		(12)	(15)	RT	(1)
HINES	1-4	POLK	CC	NG		PL			06/2016			219	0	RP	(1)
OSPREY CC	1	POLK	CC	NG		PL			01/2017			244	248	P	(2)
SUWANNEE RIVER	1-2	SUWANNEE	ST							6/2017		(57)	(56)	RT	(1)
CRYSTAL RIVER	1	CITRUS	ST	BIT		RR	WA		10/1966	4/2018		(320)	(320)	RT	(1)
CRYSTAL RIVER	2	CITRUS	ST	BIT		RR	WA		11/1969	4/2018		(420)	(423)	RT	(1)
SUWANNEE RIVER	3	SUWANNEE	ST							6/2018		(71)	(73)	RT	(1)
CITRUS	1	CITRUS	CC					11/2015	05/2018			1640	1820	P	(1) and (3)
OSPREY CC	1	POLK	CC	NG		PL			01/2020			331	348	P	(4)
HIGGINS	P 1-4	PINELLAS	GT							6/2020		(105)	(116)	RT	(1)
UNKNOWN	P 1	UNKNOWN	GT					01/2022	06/2024			203	222	P	(1)
UNKNOWN	P 2	UNKNOWN	GT					01/2022	06/2024			203	222	P	(1)
UNKNOWN	P 3	UNKNOWN	GT					01/2022	06/2024			203	222	P	(1)
UNKNOWN	P 4	UNKNOWN	GT					01/2022	06/2024			203	222	P	(1)

a. See page v. for Code Legend of Future Generating Unit Status.
b. NOTES
(1) Planned, Prospective, or Committed project.
(2) Osprey CC Acquisition is pending approval from the PSC.
(3) Approximately 50% of plant capacity is planned in service 5/2018 with the balance in service 11/2018
(4) Osprey CC Acquisition total firm capacity beginning 1/2020 is: Summer 575MW and Winter 596MW

DUKE ENERGY FLORIDA

SCHEDULE 9
STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES
AS OF JANUARY 1, 2015

(1)	Plant Name and Unit Number:		**Citrus Combined Cycle**	
(2)	Capacity			
	a. Summer:		1640	
	b. Winter:		1820	
(3)	Technology Type:		COMBINED CYCLE	
(4)	Anticipated Construction Timing			
	a. Field construction start date:		11/2015	
	b. Commercial in-service date:		5/2018 - 11/2018	(EXPECTED)
(5)	Fuel			
	a. Primary fuel:		NATURAL GAS	
	b. Alternate fuel:		N/A	
(6)	Air Pollution Control Strategy:		SCR and CO Catalyst	
(7)	Cooling Method:		Cooling Tower	
(8)	Total Site Area:		410	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):		8.00	%
	b. Forced Outage Factor (FOF):		2.00	%
	c. Equivalent Availability Factor (EAF):		90.16	%
	d. Resulting Capacity Factor (%):		78.2	%
	e. Average Net Operating Heat Rate (ANOHR):		6,573	BTU/kWh
(13)	Projected Unit Financial Data			
	a. Book Life (Years):		35	
	b. Total Installed Cost (In-service year $/kW):		924.19	
	c. Direct Construction Cost ($/kW):	($2015)	794.11	
	d. AFUDC Amount ($/kW):		99.90	
	e. Escalation ($/kW):		30.18	
	f. Fixed O&M ($/kW-yr):	($2015)	6.30	
	g. Variable O&M ($/MWh):	($2015)	2.08	
	h. K Factor:		NO CALCULATION	

NOTES
. Total Installed Cost includes gas expansion, transmission interconnection and integration
. $/kW values are based on Summer capacity
. Fixed O&M cost does not include firm gas transportation costs

DUKE ENERGY FLORIDA

SCHEDULE 9
STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES
AS OF JANUARY 1, 2015

(1)	Plant Name and Unit Number:		**Undesignated CTs (P1 - P4)**	
(2)	Capacity			
	a. Summer:		811	
	b. Winter:		888	
(3)	Technology Type:		COMBUSTION TURBINE	
(4)	Anticipated Construction Timing			
	a. Field construction start date:		1/2022	
	b. Commercial in-service date:		6/2024	(EXPECTED)
(5)	Fuel			
	a. Primary fuel:		NATURAL GAS	
	b. Alternate fuel:		DISTILLATE FUEL OIL	
(6)	Air Pollution Control Strategy:		Dry Low Nox Combustion	
(7)	Cooling Method:		N/A	
(8)	Total Site Area:		UNKNOWN	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):		3.85	%
	b. Forced Outage Factor (FOF):		2.05	%
	c. Equivalent Availability Factor (EAF):		94.18	%
	d. Resulting Capacity Factor (%):		4.5	%
	e. Average Net Operating Heat Rate (ANOHR):		10,399	BTU/kWh
(13)	Projected Unit Financial Data			
	a. Book Life (Years):		35	
	b. Total Installed Cost (In-service year $/kW):		713.38	
	c. Direct Construction Cost ($/kW):	($2015)	553.87	
	d. AFUDC Amount ($/kW):		31.75	
	e. Escalation ($/kW):		127.76	
	f. Fixed O&M ($/kW-yr):	($2015)	4.73	
	g. Variable O&M ($/MWh):	($2015)	9.19	
	h. K Factor:		NO CALCULATION	

NOTES
. Total Installed Cost includes gas expansion, transmission interconnection and integration
. $/kW values are based on Summer capacity
. Fixed O&M cost does not include firm gas transportation costs

DUKE ENERGY FLORIDA

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

OSPREY

(1) POINT OF ORIGIN AND TERMINATION:	Osprey - Haines City East
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	Existing and new transmission line rights-of-way
(4) LINE LENGTH:	18 miles
(5) VOLTAGE:	230 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	1/1/2020
(7) ANTICIPATED CAPITAL INVESTMENT:	$66,000,000
(8) SUBSTATIONS:	Osprey, Haines City East
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

DUKE ENERGY FLORIDA

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

OSPREY

(1) POINT OF ORIGIN AND TERMINATION:	Osprey - Kathleen
(2) NUMBER OF LINES:	1
(3) RIGHT-OF-WAY:	New transmission line right-of-way
(4) LINE LENGTH:	23 miles
(5) VOLTAGE:	230 kV
(6) ANTICIPATED CONSTRUCTION TIMING:	1/1/2020
(7) ANTICIPATED CAPITAL INVESTMENT:	$84,000,000
(8) SUBSTATIONS:	Osprey, Kathleen
(9) PARTICIPATION WITH OTHER UTILITIES:	N/A

INTEGRATED RESOURCE PLANNING OVERVIEW

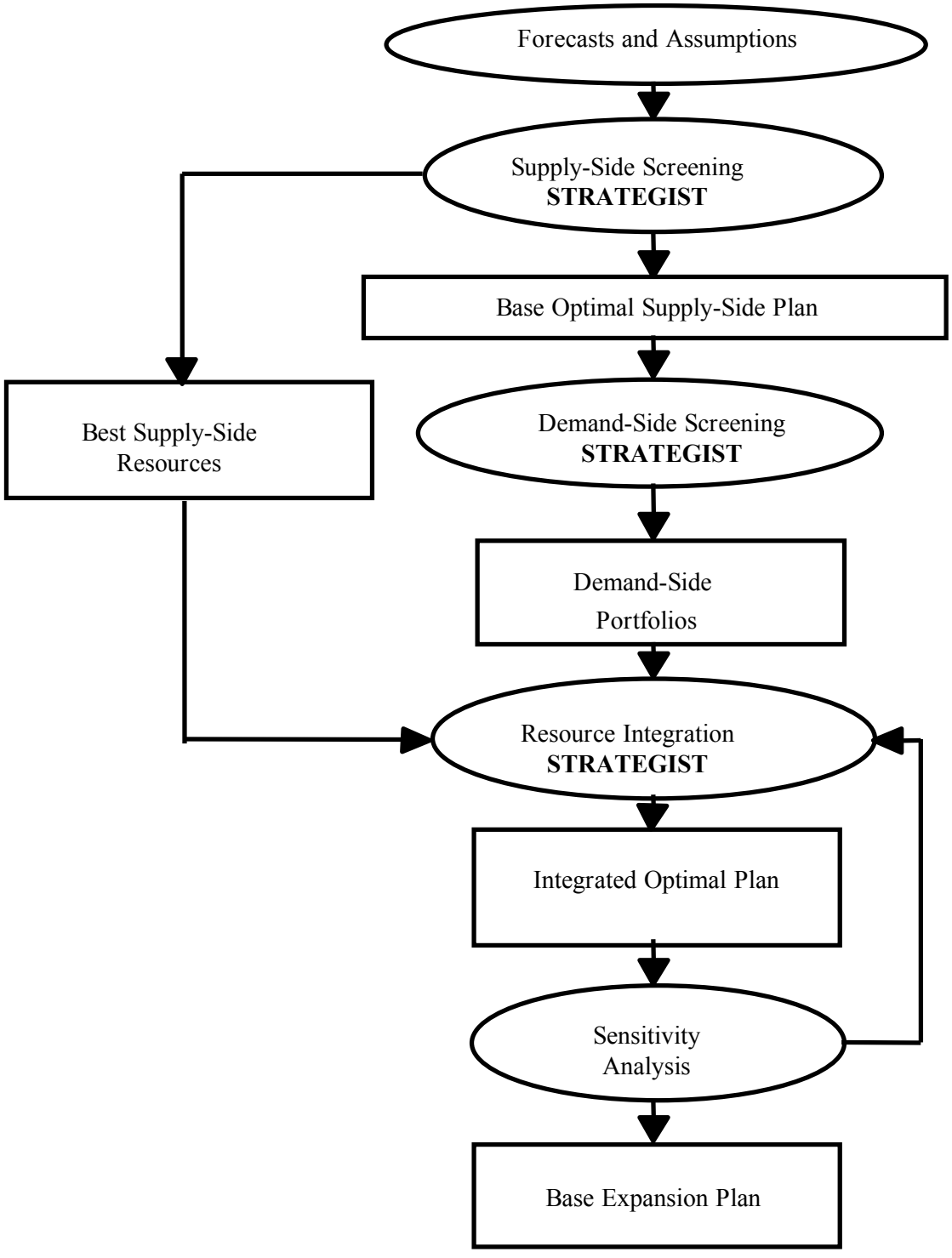
DEF employs an Integrated Resource Planning (IRP) process to determine the most cost-effective mix of supply- and demand-side alternatives that will reliably satisfy our customers' future demand and energy needs. DEF's IRP process incorporates state-of-the-art computer models used to evaluate a wide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

An overview of DEF'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 DEF 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 DEF 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 DEF's view of the most likely future scenario are developed. Additional future scenarios along with high and low forecasts may also be developed. 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 DEF'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. 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.

DEF 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 DEF's ability to meet its forecasted seasonal peak load with firm capacity. DEF 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 DEF, is a maximum of one day in ten years loss of load probability.

DEF 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. DEF'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, DEF'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. DEF 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 DEF'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 DEF'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 reasonable revenue requirements (rates) for DEF'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. The base cost for coal is based on the existing

contracts and spot market coal prices and transportation arrangements between DEF 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 DEF's most recent planning studies were 47 percent debt and 53 percent equity capital structure, projected cost of debt of 4.55 percent, and an equity return of 10.5 percent. The assumptions resulted on a weighted average cost of capital of 7.70 percent and an after-tax discount rate of 6.95 percent.

TEN-YEAR SITE PLAN (TYSP) RESOURCE ADDITIONS

DEF's planned supply resource additions and changes are shown in Schedule 8 and are referred to as DEF's Base Expansion Plan. This plan includes summer capacity uprates at the Hines Energy Center through the installation of Inlet Chilling, a combined cycle facility in 2018 at Citrus County, a purchase and proposed acquisition of the Calpine Osprey Energy Combined Cycle Unit and four planned Combustion Turbine Units at an undesignated site(s) in 2024. DEF continues to seek market supply-side resource alternatives to enhance DEF's resource plan and has extended a purchase power agreement with Southern Power Company beginning in 2016. In addition to the planned resources discussed above, DEF's plan reflects 500 MW of solar PV over the next 10 year period as an energy resource.

DEF's Base Expansion Plan projects the need for additional capacity with proposed in-service dates during the ten-year period from 2015 through 2024. The planned capacity additions, together with purchases from Qualifying Facilities (QF), Investor Owned Utilities, and Independent Power Producers help the DEF system meet the energy requirements of its customer base. The capacity needs identified in this plan may be impacted by DEF's ability to extend or replace existing purchase power, cogeneration and QF contracts and to secure new renewable

purchased power resources in their respective projected timeframes. The additions in the Base Expansion Plan 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 DEF's Base Expansion Plan.

Through its ongoing planning process, DEF 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, 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

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

Municipal Solid Waste Facilities:

Pasco County Resource Recovery (23 MW)

Pinellas County Resource Recovery (54.8 MW)

Dade County Resource Recovery (As Available)

Lake County Resource Recovery (As Available)

Waste Heat from Exothermic Processes:

PCS Phosphate (As Available)

Waste Wood, Tires, and Landfill Gas:

Ridge Generating Station (39.6 MW)

Woody Biomass:

Florida Power Development (60 MW)

Photovoltaics

DEF owned installations (approximately 930 kW)

DEF's Net Metering Tariff includes over 18.5 MW of solar PV

In addition, DEF has contracts with U.S. EcoGen (60 MW) and E2E2 Inc. (30 MW). U.S. Ecogen will utilize an energy crop, while E2E2 Inc. facility will utilize municipal solid waste as its fuel source.

DEF has also signed several As-Available contracts utilizing biomass and solar PV technologies. A summary of contracted renewable energy resources is below.

Supplier	Size (MW)	Currently Delivering?	Anticipated In-Service Date
Lake County Resource Recovery	As Avail	Yes	
Pasco County Resource Recovery	23	Yes	
Dade County Resource Recovery	As Avail	Yes	
Pinellas County Resource Recovery	54.8	Yes	
Ridge Generating Station	39.6	Yes	
PCS Phosphate	As Avail	Yes	
Florida Power Development, LLC	60	Yes	
U.S. EcoGen Polk	60	No	1/1/17
E2E2 Inc.	30	No	1/1/17
DEF owned Photovoltaics	1	Yes	
Net Metered Customers (2,074)	18.5	Yes	
Blue Chip Energy - Sorrento	As Avail	No	See Note Below
National Solar - Gadsden	As Avail	No	See Note Below
National Solar - Hardee	As Avail	No	See Note Below
National Solar - Highlands	As Avail	No	See Note Below
National Solar - Osceola	As Avail	No	See Note Below
National Solar - Suwannee	As Avail	No	See Note Below

Note: As Available purchases are made on an hour-by-hour basis for which contractual commitments as to the quantity, time, or reliability of delivery are not required.

DEF continues to seek out renewable suppliers that can provide reliable capacity and energy at economic rates. DEF continues to keep an open Request for Renewables (RFR) soliciting proposals for renewable energy projects. DEF's open RFR continues to receive interest and to date has logged over 400 responses. DEF will continue to submit renewable contracts in compliance with FPSC rules.

Depending upon the mix of generators operating at any given time, the purchase of renewable energy may reduce DEF's use of fossil fuels. Non-intermittent renewable energy sources also defer or eliminate the need to construct more conventional generators. As part of DEF's integrated resource planning process we are continually evaluating cost-effective alternatives to meet our customer's energy needs. DEF knows that renewable and distributed energy resources are an important part of Florida's energy future and we are committed to advancing these resources in a sustainable and least cost way. We are encouraged to see solar PV technology continue to reduce in price and the associated public interest. As a result of the forecasts around solar PV technology, DEF has incorporated this clean energy source as a supply-side resource in both DEF's near-term and long-term generation plans. The near-term scaled demonstration facilities will allow DEF to examine solar PV generation technology efficiency, sufficiency, and adequacy, the cost of providing such technology, and the value of such technology to our customers. Adding these near-term scaled solar facilities is a natural evolution of integrating new generation technology and supplements the solar PV research and demonstration pilots under DEF's conservation programs. As Florida becomes increasingly dependent on natural gas as a fuel supply, DEF is also interested in the long term benefit renewables can aid in energy diversity. DEF has included solar PV resources in its long-term forecast; however, the forecast relies heavily on the forward looking price for this technology, the value rendered by this technology and considerations to other emerging cost-effective alternatives. The DEF forecast for renewables includes 500,000 KW of PV solar installed over the 10 year period in addition to installed biomass renewables.

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. 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.

TRANSMISSION PLANNING

DEF'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 DEF, Florida Reliability Coordinating Council, Inc. (FRCC), and North American Reliability Corporation (NERC) criteria. This involves the use of load flow and transient stability programs to model various contingency situations that may occur, and in 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. DEF normally runs this analysis for system peak and off-peak load levels for possible contingencies, including 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, transmission lines, or combinations of each (some load loss is permissible under the 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 DEF 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.

DEF presently uses the following reference documents to calculate and manage Available Transfer Capability (ATC), Total Transfer Capability (TTC) and Transmission Reliability Margin (TRM) for required transmission path postings on the Florida Open Access Same Time Information System (OASIS):

- http://www.oatioasis.com/FPC/FPCdocs/ATCID_Posted_Rev2.docx.
- http://www.oatioasis.com/FPC/FPCdocs/TRMID_3.docx

DEF uses the following reference document to calculate and manage Capacity Benefit Margin (CBM):

- http://www.oatioasis.com/FPC/FPCdocs/CBMID_rev2.docx

DEF proposed bulk transmission line additions are summarized in the following Table 3.3. DEF has listed only the larger transmission projects. These projects may change depending upon the outcome of DEF's final corridor and specific route selection process.

TABLE 3.3
DUKE ENERGY FLORIDA
LIST OF PROPOSED BULK TRANSMISSION LINE ADDITIONS
2015 - 2024

MVA RATING WINTER	LINE OWNERSHIP	TERMINALS		LINE LENGTH (CKT-MILES)	COMMERCIAL IN-SERVICE DATE (MO./YEAR)	NOMINAL VOLTAGE (kV)
1000	DEF	DEBARY	ORANGE CITY	6	11/30/2015	230

(Blank Page)

CHAPTER 4

ENVIRONMENTAL AND LAND USE INFORMATION

DUKE ENERGY. FLORIDA

CHAPTER 4
ENVIRONMENTAL AND LAND USE INFORMATION

PREFERRED SITES

DEF's 2015 TYSP Preferred Sites include the Osprey site, Citrus County for Combined Cycle natural gas generation (adjacent to the DEF Crystal River Site) and Suwannee County for Simple Cycle natural gas generation. DEF notes that, as reflected in its filing in Docket 150043-EI, the Suwannee CTs will only be constructed if DEF cannot purchase the Osprey Energy Center. The Suwannee County Preferred Site discussed below includes details about the project as presented in that docket; however, if DEF can purchase the Osprey Energy Center, the Suwannee County site will remain a Preferred Site. DEF's expansion plan beyond this TYSP planning horizon includes potential nuclear power at the Levy County greenfield. The Osprey Site, Suwannee County, Citrus County, and Levy County Preferred Sites are discussed below.

OSPREY SITE

The Osprey Energy Center is currently in operation and holds all the environmental permits required. It is a 537 MW natural gas-fired, combined-cycle generating facility (see Figure 4.1.a below) located in Auburndale, Florida. The Osprey Site consists of approximately 18.5 acres situated approximately 1.5 miles south of downtown Auburndale. The Osprey Site was formerly a citrus grove and was unused until construction of the Osprey Project began. Land uses adjacent to the Osprey Site include the Tampa Electric Company (TECO) Recker Substation and existing TECO 230 kV transmission line, a 150 MW cogeneration plant, a 120 MW combustion turbine power plant, and the City of Auburndale cemetery.

The Plant commenced commercial operation in May 2004 with a nominal baseload power output of 537 MW and peaking output of 599 MW. The major equipment at the Plant includes two Siemens Westinghouse combustion turbines whose exhausts are routed to two heat recovery steam generators, which generate and provide steam to one steam turbine. Osprey Energy Center sells the full output of the power plant to large, load-serving customers in Florida, through power purchase agreements (PPAs).

The transmission Interconnection and Operating Agreement was executed between Tampa Electric Company (Transmission Provider) and Calpine Construction Finance Company, L.P. (interconnection Customer) on November 16, 2001. The point of interconnection is defined as Recker Substation in Polk County, Florida.

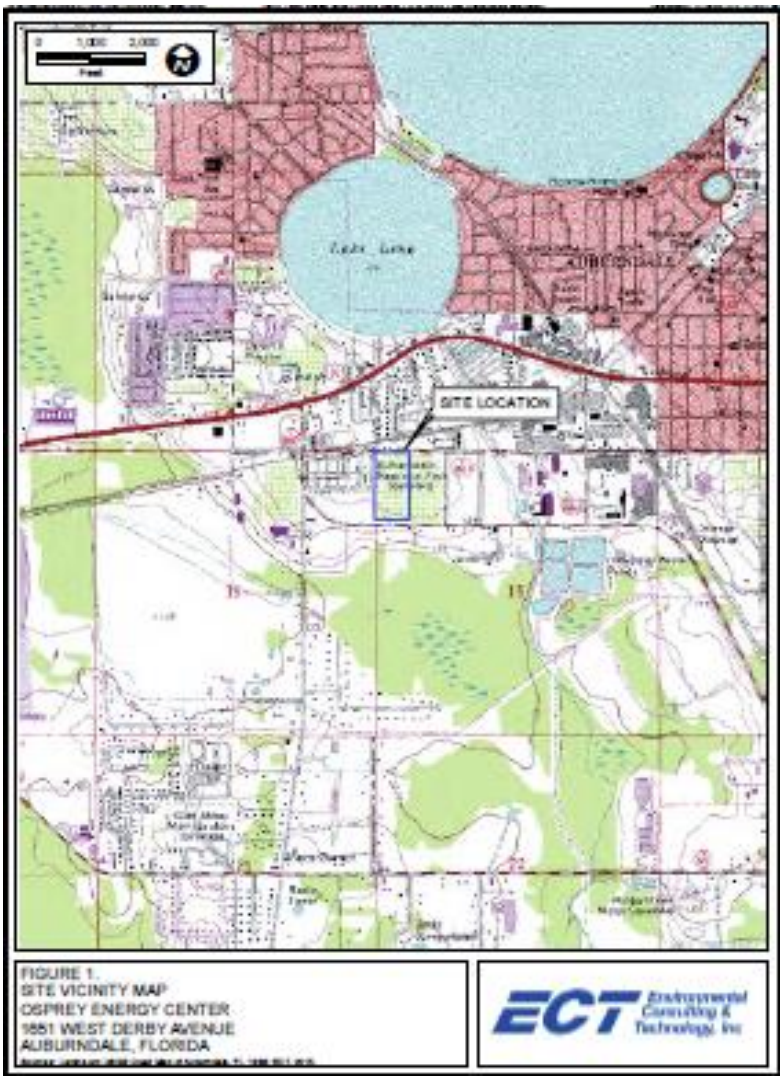
Natural gas fuel is supplied to the Site by a 16-inch diameter natural gas transmission lateral owned by Gulfstream. Calpine Energy entered into a fine transportation service agreement with Gulfstream in July 2003.

The Osprey Energy Center has an amended and restated water supply agreement executed on August 5, 2002, between Calpine Construction Finance, LP and the City of Auburndale, Florida (City) that will remain in place for a term of 21 years from the day that reclaimed water is first delivered to the Plant.

The Reclaimed Water Agreement can be extended for an additional five year term, upon written notification at least six months prior to expiration of the initial term. Geographically, the Osprey Plant is positioned within 30 miles of the Hines Energy Center and 40 miles of Intercession City, which aligns well with existing DEF generation resources.

FIGURE 4.1.a

Existing Osprey Acquisition Site Location



SUWANNEE COUNTY

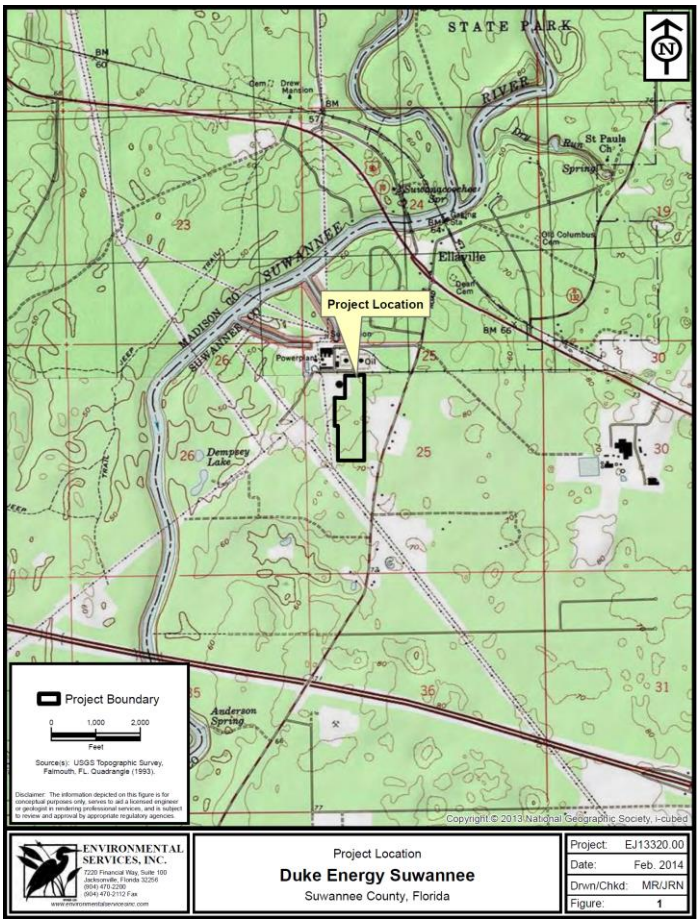
DEF has identified the existing Suwannee River Energy Center site in Suwannee County for simple cycle CTs (see Figure 4.1.b below). The proposed power block includes two (2) dual fuel CTs using F-class technology. The project area totals approximately 68 acres and is located west of River Road, south of U.S. 90. The project area consists of a naturally occurring pine-oak community of the subject parcel and has a canopy primarily composed of longleaf and slash pine as well as turkey and laurel oak. There are no wetlands within the limits of the project area.

DEF's assessment of the Suwannee site addressed whether any threatened and endangered species or archeological and cultural resources would be adversely impacted by the development of the site the facilities. Gopher tortoises, a state listed species, may be impacted by the development of the project. DEF will acquire a permit from the Florida Fish and Wildlife Conservation Commission to relocate any gopher tortoises from the project area prior to construction. No archaeological or cultural resources will be adversely impacted by the project.

The new project will not require an increase of water use beyond what is already permitted to be used by the site from the Suwannee River Water Management District. Development of the project site will also require an Environmental Resource Permit and Air Permit from the Florida Department of Environmental Protection. Suwannee County requires a special exception approval to construct the project on the property.

FIGURE 4.1.b

Suwannee County Preferred Site Location



CITRUS COUNTY

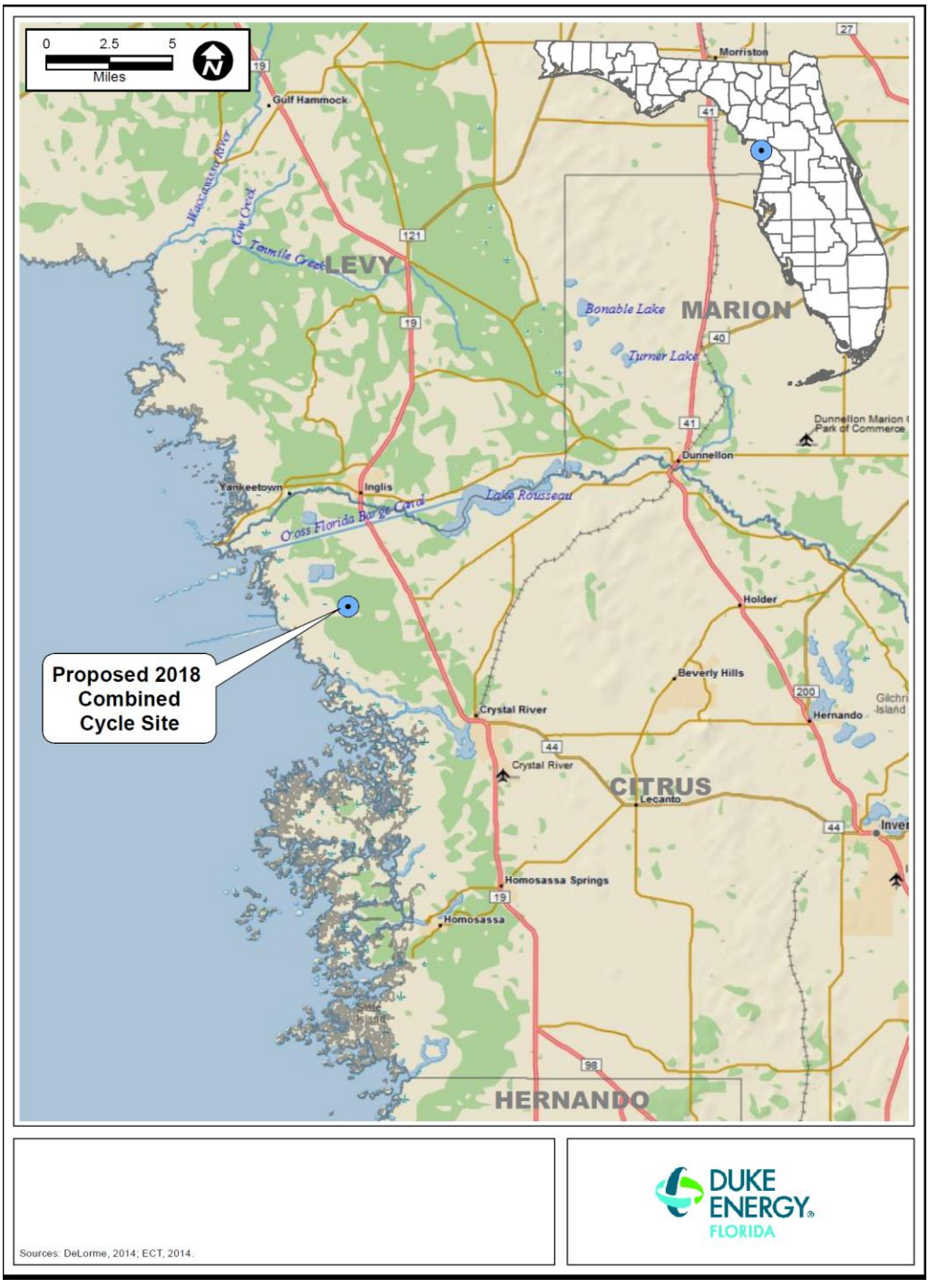
DEF has identified a site in Citrus County as a preferred site for new combined cycle generation (see Figure 4.1.c below). The Company is planning for the construction of a new combined cycle facility on the property with the unit coming on line during 2018. The Citrus site consists of approximately 400 acres of property located immediately north of the Crystal River Energy Center (CREC) transmission line right-of-way and east of the Crystal River Units 4 and 5 coal ash storage area and north of the DEF Crystal River to Central Florida 500-/230-kV transmission line right-of-way. The property consists of regenerating timber lands, forested wetlands, and rangeland bounded to the south by the CREC North Access Road. The site is currently part of the Holcim mine. A new natural gas pipeline will be brought to the Project Site by the natural gas supplier on right of way provided by the supplier. The water pipelines and transmission lines will

use existing DEF rights-of-way. No new rail spur is proposed and site access will be via existing roadways.

DEF's assessment of the Citrus site addressed whether any threatened and endangered species or archeological and cultural resources would be adversely impacted by the development of the site the facilities. No significant issues were identified in DEF's evaluations of the property. The site will be certified by the State of Florida under the Power Plant Siting Act. Federal permits for the development of the site will include a National Pollution Discharge Elimination System (NPDES) permit, Title V Air Operating Permit and a Clean Water Act Section 404 Permit. The site will require Land Use Approval from Citrus County. The new project is proposing to use the existing CR3 intake structure and a new discharge structure in the existing discharge canal.

FIGURE 4.1.c

Citrus County Preferred Site Location



LEVY COUNTY NUCLEAR POWER PLANT – LEVY COUNTY

Although the proposed Levy Nuclear Project is no longer an option for meeting energy needs within the originally scheduled time frame, Duke Energy Florida continues to regard the Levy site as a viable option for future nuclear generation and understands the importance of fuel diversity in creating a sustainable energy future. Because of this the Company will continue to pursue the combined operating license outside of the Nuclear Cost Recovery Clause with shareholder dollars as set forth in the 2013 Settlement Agreement. The Company continues to monitor developments that could affect the future viability of new nuclear development in Florida, including the recently proposed USEPA Clean Power Plan which could place a premium on carbon free generation. The Company will make a final decision on new nuclear generation in Florida in the future based on, among other factors, energy needs, project costs, carbon regulation, natural gas prices, existing or future legislative provisions for cost recovery, and the requirements of the NRC's combined operating license.

The Levy County site is shown in Figures 4.1.d below:

FIGURE 4.1.d

Levy County Nuclear Power Plant (Levy County)