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April 22, 2024

**VIA ELECTRONIC DELIVERY**

Adam J. Teitzman, Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

Re: Ten-Year Site Plan as of December 31, 2023; Undocketed

Dear Mr. Teitzman:

Pursuant to Rule 25-22.071, F.A.C., please find enclosed for filing Duke Energy Florida, LLC's, 2024 Amended Ten-Year Site Plan. DEF discovered an inadvertent error in the coal price forecast, which caused a change to Schedules 5, 6.1, 6.2 and a portion of 9.

Thank you for your assistance in this matter and if you have any questions, please feel free to contact me at (850) 521-1425.

Sincerely,

*/s/ Stephanie A. Cuello*

Stephanie A. Cuello

SAC/clg  
Attachments

cc: Greg Davis, [GDavis@psc.state.fl.us](mailto:GDavis@psc.state.fl.us) and Phillip Ellis, [PEllis@psc.state.fl.us](mailto:PEllis@psc.state.fl.us), Division of Engineering, FPSC

# **Duke Energy Florida, LLC Ten-Year Site Plan**

**April 2024**

**2024-2033**

**Submitted to:  
Florida Public Service Commission**



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## CODE IDENTIFICATION SHEET

### Generating Unit Type

BA - Battery Storage  
CC - Combined Cycle  
COG - Cogeneration Facility  
CT - Combustion Turbine  
GT - Gas Turbine  
NP - Steam Power - Nuclear  
PV - Photovoltaic  
SPP - Small Power Producer  
SPS - Solar (PV) Plus Storage  
ST - Steam Turbine - Non-Nuclear

### Fuel Type

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

### Fuel Transportation

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

### 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

## **EXECUTIVE SUMMARY**

Duke Energy Florida's (DEF) 2024 Ten-Year Site Plan (TYSP) provides a description of the future electric generating unit additions and retirements selected to meet projected DEF customer resource needs for 2024 through 2033. DEF's plan continues the multi-year progress in the transition to a cleaner and more cost-effective generating fleet. In the near term, DEF anticipates the expiration of high-priced legacy contracts and retirement of numerous older simple cycle combustion turbine (CT) units offset by a planned investment in new solar, storage, and solar plus storage generation. Looking out beyond the ten-year horizon, DEF anticipates the retirement of the remaining two coal fired generating units and the potential to replace most of the energy supplied by those units with energy generated from future solar generating projects.

DEF's planned investments in renewable generation will enable fuel savings for customers, energy diversification, and will continue DEF's commitment towards a lower carbon future. Through this TYSP, DEF is planning to extend the successful deployment of utility scale solar projects approved by the Florida Public Service Commission (FPSC) in 2017 and 2021, which will bring over 1,400 MW of solar generating capacity to the DEF system through early 2024. Over the remainder of the ten-year planning period, DEF projects the addition of at least 450 MW per year of utility scale solar. By the end of the period, DEF expects to have more than 6,100 MW of utility scale solar generating capacity online.

DEF's measured and steady pace of projected solar generation adoption will combine with the increasingly clean gas fired generating fleet. DEF is beginning efficiency enhancements that will reduce fleet fuel consumption while adding close to 400 MW in highly efficient combined cycle generating capacity. Even with the additional CC upgrades, DEF anticipates a reduction in the fossil fuel fired generation of approximately 1,500 MW over the planning period.

In addition to improvements to the existing asset portfolio and the planned solar, DEF continues to build upon its pilot battery program approved in 2017. This program installed 50 MW of batteries from 2021 to 2023. These batteries provide a variety of services including solar energy storage and smoothing, grid support and voltage control, and deferral of potential new distribution investments. These assets also have the capability to enable islanding to support an amount of



local load in the event of grid separation. A transmission-tied grid scale battery energy storage unit is planned to be placed in service in 2027. This unit combines over 200 MWh of energy storage and a 100 MW capacity to provide grid stabilization during periods of solar volatility and energy shifting to lower cost of energy based on time of day. In addition, DEF continues to plan batteries paired with solar units in 2028-2030 to further balance the system and provide reliability resources supporting the large amount of planned solar generation.

DEF will accelerate the addition of four combustion turbines between years 2032 and 2033 that will replace some of the generation from Crystal River North that is planned to be retired in year 2034.

DEF plans to meet the power needs of its customers cost-effectively while adding an increasing portfolio of non-carbon emitting assets. The future solar and storage in this expansion plan along with increased efficiency in conventional generation provides energy diversity by reducing natural gas consumption while maintaining reliable and dispatchable capacity.

## **INTRODUCTION**

Section 186.801 of the Florida Statutes (F.S.) requires electric generating utilities to submit a TYSP to the 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. DEF's TYSP is compiled in accordance with FPSC Rules 25-22.070 through 25-22.072, Florida Administrative Code (F.A.C.).

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.

**CHAPTER 1**

***DESCRIPTION OF  
EXISTING FACILITIES***



# **CHAPTER 1**

## **DESCRIPTION OF EXISTING FACILITIES**

### **EXISTING FACILITIES OVERVIEW**

#### **OWNERSHIP**

Duke Energy Florida, LLC (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 1.9 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 St. 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 5,300 circuit miles of transmission lines. The distribution system includes approximately 18,000 circuit miles of overhead distribution conductors and approximately 14,000 circuit miles of underground distribution cable.

#### **ENERGY MANAGEMENT and ENERGY EFFICIENCY**

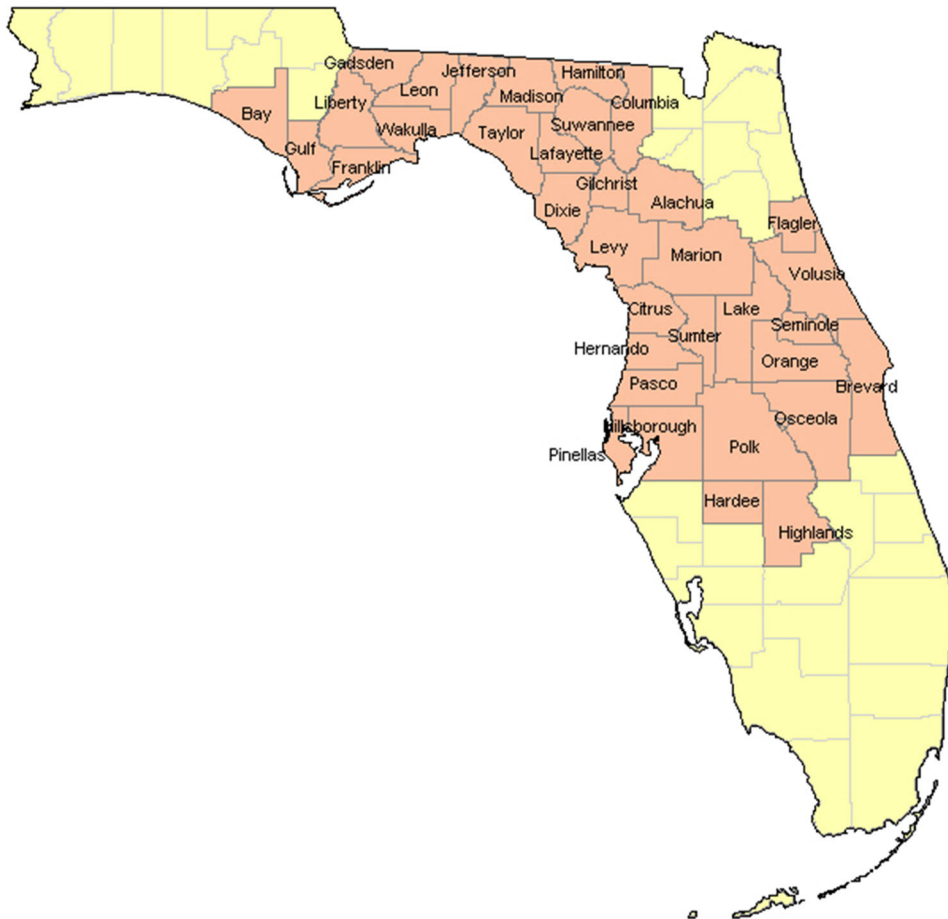
The Company's residential Energy Management program represents a demand response (DR) type of program where participating customers help manage future load growth and costs. Approximately 433,000 customers participated in the residential Energy Management program during 2023, contributing about 638 MW of winter peak-shaving capacity for use during high load periods. DEF's currently approved DSM portfolio of programs consist of five residential programs

(four energy efficiency and one demand response), six commercial and industrial programs (three energy efficiency and three demand response) and one research and development program.

### TOTAL CAPACITY RESOURCE

As of December 31, 2023, DEF had total summer firm capacity resources of 11,750 MW consisting of installed capacity of 10,290 MW and 1,460 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, 2023

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	FUEL		FUEL TRANSPORT		ALT. FUEL DAYS USE	COMPL IN-SERVICE MO./YEAR	EXPECTED RETIREMENT MO./YEAR	GEN. MAX. NAMEPLATE KW	NET CAPABILITY	
				PRI.	ALT.	PRI.	ALT.					SUMMER MW	WINTER MW
<u>STEAM</u>													
ANCLOTE	1	PASCO	ST	NG		PL			10/74		556,200	508	521
ANCLOTE	2	PASCO	ST	NG		PL			10/78		556,200	505	514
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	698	721
											<b>Steam Total</b>	<b>2,423</b>	<b>2,477</b>
<u>COMBINED-CYCLE</u>													
P L BARTOW	4	PINELLAS	CC	NG	DFO	PL	TK	*	6/09		1,254,200	1,112	1,259
CITRUS COUNTY COMBINED CYCLE	PB1	CITRUS	CC	NG		PL			10/18		985,150	807	925
CITRUS COUNTY COMBINED CYCLE	PB2	CITRUS	CC	NG		PL			11/18		985,150	803	929
HINES ENERGY COMPLEX	1	POLK	CC	NG		PL			4/99		546,500	501	521
HINES ENERGY COMPLEX	2	POLK	CC	NG	DFO	PL	TK	*	12/03		548,250	532	549
HINES ENERGY COMPLEX	3	POLK	CC	NG	DFO	PL	TK	*	11/05		561,000	523	535
HINES ENERGY COMPLEX	4	POLK	CC	NG	DFO	PL	TK	*	12/07		610,500	525	544
OSPREY ENERGY CENTER POWER PLANT	1	POLK	CC	NG		PL			5/04		644,300	245	245
TIGER BAY	1	POLK	CC	NG		PL			8/97		278,100	199	230
											<b>CC Total</b>	<b>5,247</b>	<b>5,737</b>
<u>COMBUSTION TURBINE</u>													
BARTOW	P1	PINELLAS	CT	DFO		WA		*	5/72	6/2027 **	55,400	41	50
BARTOW	P2	PINELLAS	CT	NG	DFO	PL	WA	*	6/72		55,400	41	53
BARTOW	P3	PINELLAS	CT	DFO		WA		*	6/72	6/2027 **	55,400	41	51
BARTOW	P4	PINELLAS	CT	NG	DFO	PL	WA	*	6/72		55,400	45	58
BAYBORO	P1	PINELLAS	CT	DFO		WA		*	4/73	10/2026 **	56,700	44	58
BAYBORO	P2	PINELLAS	CT	DFO		WA		*	4/73	10/2026 **	56,700	21	27
BAYBORO	P3	PINELLAS	CT	DFO		WA		*	4/73	10/2026 **	56,700	43	57
BAYBORO	P4	PINELLAS	CT	DFO		WA		*	4/73	10/2026 **	56,700	43	56
DEBARY	P2	VOLUSIA	CT	DFO		TK		*	12/75-4/76	6/2027 **	73,440	45	57
DEBARY	P3	VOLUSIA	CT	DFO		TK		*	12/75-4/76	6/2027 **	73,440	45	59
DEBARY	P4	VOLUSIA	CT	DFO		TK		*	12/75-4/76	6/2027 **	73,440	46	59
DEBARY	P5	VOLUSIA	CT	DFO		TK		*	12/75-4/76	6/2027 **	73,440	45	58
DEBARY	P6	VOLUSIA	CT	DFO		TK		*	12/75-4/76	6/2027 **	73,440	46	59
DEBARY	P7	VOLUSIA	CT	NG	DFO	PL	TK	*	10/92		103,500	74	93
DEBARY	P8	VOLUSIA	CT	NG	DFO	PL	TK	*	10/92		103,500	75	94
DEBARY	P9	VOLUSIA	CT	NG	DFO	PL	TK	*	10/92		103,500	76	94
DEBARY	P10	VOLUSIA	CT	DFO		TK		*	10/92		103,500	72	88
INTERCESSION CITY	P1	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	45	61
INTERCESSION CITY	P2	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	46	60
INTERCESSION CITY	P3	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	46	61
INTERCESSION CITY	P4	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	46	62
INTERCESSION CITY	P5	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	45	59
INTERCESSION CITY	P6	OSCEOLA	CT	DFO		PL,TK		*	5/74		56,700	47	60
INTERCESSION CITY	P7	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	10/93		103,500	78	90
INTERCESSION CITY	P8	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	10/93		103,500	77	88
INTERCESSION CITY	P9	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	10/93		103,500	77	88
INTERCESSION CITY	P10	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	10/93		103,500	74	86
INTERCESSION CITY	P11	OSCEOLA	CT	DFO		PL,TK		*	1/97		148,500	140	161
INTERCESSION CITY	P12	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	12/00		98,260	73	89
INTERCESSION CITY	P13	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	12/00		98,260	73	91
INTERCESSION CITY	P14	OSCEOLA	CT	NG	DFO	PL	PL,TK	*	12/00		98,260	73	90
SUWANNEE RIVER	P1	SUWANNEE	CT	NG	DFO	PL	TK	*	10/80		65,999	48	65
SUWANNEE RIVER	P2	SUWANNEE	CT	NG	DFO	PL	TK	*	10/80		65,999	48	64
SUWANNEE RIVER	P3	SUWANNEE	CT	NG	DFO	PL	TK	*	11/80		65,999	49	65
UNIVERSITY OF FLORIDA	P1	ALACHUA	GT	NG		PL			1/94		43,000	44	50
											<b>CT Total</b>	<b>1,972</b>	<b>2,461</b>

\* APPROXIMATELY 2 TO 3 DAYS OF OIL USE TYPICALLY TARGETED FOR ENTIRE PLANT.  
\*\* DATES FOR RETIREMENT ARE APPROXIMATE AND SUBJECT TO CHANGE

**DUKE ENERGY FLORIDA**

**SCHEDULE 1**  
EXISTING GENERATING FACILITIES

AS OF DECEMBER 31, 2023

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<u>PLANT NAME</u>	<u>UNIT NO.</u>	<u>LOCATION (COUNTY)</u>	<u>UNIT TYPE</u>	<u>FUEL</u>		<u>FUEL TRANSPORT</u>		<u>ALT. FUEL DAYS USE</u>	<u>COMPL IN-SERVICE MO./YEAR</u>	<u>EXPECTED RETIREMENT MO./YEAR</u>	<u>GEN. MAX. KW</u>	<u>NET CAPABILITY</u>	
				<u>PRI.</u>	<u>ALT.</u>	<u>PRI.</u>	<u>ALT.</u>					<u>SUMMER MW</u>	<u>WINTER MW</u>
<u>SOLAR</u>													
OSCEOLA SOLAR FACILITY	PV1	OSCEOLA	PV	SO					5/16		3,800	2	0
PERRY SOLAR FACILITY	PV1	TAYLOR	PV	SO					8/16		5,100	2	0
SUWANNEE RIVER SOLAR FACILITY	PV1	SUWANNEE	PV	SO					11/17		8,800	4	0
HAMILTON SOLAR POWER PLANT	PV1	HAMILTON	PV	SO					12/18		74,900	42	0
TRENTON SOLAR POWER PLANT	PV1	GILCHRIST	PV	SO					12/19		74,900	42	0
LAKE PLACID SOLAR POWER PLANT	PV1	HIGHLANDS	PV	SO					12/19		45,000	25	0
ST PETERSBURG PIER	PV1	PINELLAS	PV	SO					12/19		350	0	0
COLUMBIA SOLAR POWER PLANT	PV1	COLUMBIA	PV	SO					3/20		74,900	42	0
DEBARY SOLAR POWER PLANT	PV1	VOLUSIA	PV	SO					5/20		74,500	33	0
SANTA FE SOLAR POWER PLANT	PV1	COLUMBIA	PV	SO					3/21		74,900	42	0
TWIN RIVERS SOLAR POWER PLANT	PV1	HAMILTON	PV	SO					3/21		74,900	42	0
DUETTE SOLAR POWER PLANT	PV1	MANATEE	PV	SO					10/21		74,500	42	0
SANDY CREEK SOLAR POWER PLANT	PV1	BAY	PV	SO					5/22		74,900	42	0
FORT GREEN SOLAR POWER PLANT	PV1	HARDEE	PV	SO					6/22		74,900	33	0
CHARLIE CREEK SOLAR POWER PLANT	PV1	HARDEE	PV	SO					8/22		74,900	42	0
BAY TRAIL SOLAR POWER PLANT	PV1	CITRUS	PV	SO					9/22		74,900	42	0
HILDRETH SOLAR POWER PLANT	PV1	SUWANNEE	PV	SO					4/23		74,900	42	0
HIGH SPRINGS SOLAR POWER PLANT	PV1	ALACHUA	PV	SO					4/23		74,900	42	0
HARDEETOWN SOLAR POWER PLANT	PV1	LEVY	PV	SO					4/23		74,900	42	0
BAY RANCH SOLAR POWER PLANT	PV1	BAY	PV	SO					4/23		74,900	42	0
<b>Solar Total</b>												<b>648</b>	<b>0</b>
<b>TOTAL RESOURCES (MW)</b>												<b>10,290</b>	<b>10,675</b>



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**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). In general, this discussion refers to DEF's base forecast.

The DEF forecast utilized economic data from July 2023. From a macro perspective, the U.S. economy was characterized by several significant trends and changes. The labor market was at full employment. The Federal Reserve had actively increased interest rates since early 2022 in an effort to control inflation (3.6% as of July 2023). Additionally, the central bank had been reducing its holdings of financial assets. Interest rates on ten-year Treasury bonds were near their expected long-term levels, and fiscal policy, despite a temporary suspension of the debt limit, was projected to be somewhat expansionary with the passage of the Inflation Reduction Act. The U.S. dollar remained strong due to monetary policy and global uncertainties. From a low in Q2 2020 to a peak in Q2 2021, inflation adjusted corporate profits remained above pre-pandemic levels. Global oil prices were expected to stay below \$100 per barrel. The pandemic's impact was waning, and the ongoing Russian war's influence on global markets was predicted to decrease.

In mid-2023, Florida's economy held its position as one of the top performers in the region. Job growth had slowed slightly over the past quarter, but Florida had outperformed nearly all states in the region during the past six- and 12-month periods. Every major industry had been performing well throughout the year, with tourism, the state's core driver, leading in job creation. Healthcare and utilities also stood out. Net hiring in finance had slowed due to market instability. The unemployment rate had remained steady below its previous cyclical low, despite a 5% growth in the labor force since its pre-pandemic level. While the housing market had cooled, there were signs of optimism, including a monthly increase in house prices in February. Single-family permit issuance had decreased from the previous year's pace, but the multifamily market was on track for

its strongest year in decades. Florida was expected to continue performing well, but the impact of higher prices and elevated interest rates would likely slow job creation and put pressure on the housing market. The vital tourism industry would provide less support as well. In the long term, Florida's advantageous factors such as low costs, favorable weather, and an improving industrial composition would drive above-average job and income growth.

Historical 29 county service area household, population, and people per household data were used for the Base Case, High Case, and Low Case service area population projections. The DEF service area population was estimated to have grown at an average ten-year compound annual growth rate (CAGR) of 1.56% from 2014-2023 (Schedule 2.1.1 Column 2). The projected DEF service area population growth weakened to a level of 1.20% over the 2024-2033 period due to higher mortality rates among aging baby-boomers. The rate of residential customer growth, which averaged 1.72% per year over the historical ten-year period, is expected to continue at an average of 1.72%. The total number of DEF customers grew from 1.69 million in 2014 to 1.96 million in 2023, an increase of 269,130 or 1.65% annual growth rate. The projected number of additional total customers between 2024 and 2033 is projected to be 320,423 for a 1.67% annual growth rate.

Responses to the pandemic, which changed the patterns of class energy consumption, have reverted to pre-COVID usage characteristics. Remote work in the DEF service area still exists but at a much smaller level than that reached early in the pandemic. These changes imply a decrease in residential energy consumption which can be seen in the projected annual growth rate for average kWh consumption per customer (Schedule 2.1.1 Column 6). The projected ten-year annual growth rate for average kWh consumption per customer is -0.37% vs. a historical rate of -0.21%. Residential use per customer continues to decline due to higher energy prices/inflation, energy efficiency and rooftop solar adoption. In terms of annual residential sales growth, measured in GWh (1.34% projected vs. 1.51% historical), sustained residential customer growth (1.72% projected vs. 1.72% historical) is working to offset the declining use per customer. Labor shortages and the low cost of living in Florida relative to other parts of the U.S. also continue to attract people to the state as per capita income adjusted for cost of living is more favorable in Florida than other parts of the U.S. Florida continues to be a tourist attraction and retirement haven. Given the increase in the retirement population in the U.S. over the near term as the "Baby Boomer"

generation reaches 65 and older, the retirement cohort in Florida should increase significantly over the next five to ten years. Increases in commercial and industrial class energy requirements have returned as well. Commercial sales growth (1.57% projected vs. 0.61% historical) is projected to be driven by the return to normal operating hours, population growth, and consumer spending/tourism. Sales to the industrial class (0.20% projected vs. 0.43% historical) were helped in 2023 by the Nucor Steel plant startup, Mosaic's operations growth, and Trulieve's startup. On the other hand, in November 2023, GP Cellulose shut down its Perry, FL manufacturing site. In February 2024, another major customer announced that they will be installing 6 MW of customer-owned CHP. These two customers accounted for nearly 5% of 2023 Industrial sales. In 2033, several major mining customers will deplete their resources through their operations. This is discussed in further detail under "General Assumptions" page 2-33. Over a nine-year period from 2024-2032, the industrial GWh growth rate was 1.08%. Long-term, total retail sales continue to increase (1.30% projected vs. 1.03% historical) but remain subject to uncertain economic conditions such as increasing rates, unemployment, and energy prices.

From 2014 to 2023, net energy for load (NEL) increased by 0.81% per year (Schedule 2.3.1 Column 4). The average projected ten-year CAGR for NEL is 0.91%. While Sales for Resale experienced an average annual decrease of -26.45% during the forecast period, sustained retail load growth offsets the loss of these contracts. Long term, DEF Sales for Resale energy sales are projected to essentially disappear.

During the 2014 to 2023 historical period the DEF summer net firm demand (Schedule 3.1.1 Column 10) increased from 8,523 MW to 9,352 MW, an average annual ten-year increase of 1.04%. This increase was driven by the ten-year average customer growth of 1.65% per year. The Wholesale summer peak remained relatively flat with a ten-year CAGR of 0.18%. Wholesale load was offset by higher conservation levels and additional residential demand response capability (Schedule 3.1.1). Going forward, the projected total DEF summer net firm demand, 2024 – 2033, grows at a slightly lower average annual rate of 0.96% due to declining Sales for Resale. The historical DEF firm winter peak ten-year CAGR was 1.00% per year driven by customer growth. Projected total DEF winter net firm demand remained positive with an average annual rate of 0.42% between 2024 and 2033 due to a reduction in the projected Sales for Resale peak demand

(-8.03% annual average decline), offset by expected ten-year growth in Retail winter peak of 1.06%. Both summer and winter Sales for Resale peak demand are expected to decline significantly towards the end of the ten-year projection.

DEF continues to provide alternate “high” and “low” forecasts for customers, energy, and peak demand, recognizing that the economic future is uncertain due to the tightening of monetary policy or other unknown events. The Fed’s goal has been a “soft landing” where inflation is reigned in to 2% without sending the economy into a recession. Moody’s S1 and S3 (high & low) Florida economic scenarios were used to provide a range of economic variables around the Base Case scenario. These were combined with high and low peak weather scenarios for each season and high and low population growth scenarios from Moody’s.

## **ENERGY CONSUMPTION AND DEMAND FORECAST SCHEDULES**

The below schedules have been provided to represent DEF's expectations for a Base Case as well as reasonable High and Low forecast scenarios for resource planning purposes. (Base-B, High-H and Low-L):

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

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.1.1**

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND

NUMBER OF CUSTOMERS BY CUSTOMER CLASS

**BASE CASE FORECAST**

(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
HISTORY:								
2014	3,747,160	2.492	19,003	1,503,758	12,637	11,789	167,253	70,485
2015	3,794,138	2.489	19,932	1,524,605	13,074	12,070	169,147	71,359
2016	3,837,436	2.485	20,265	1,543,967	13,126	12,094	170,999	70,724
2017	3,906,975	2.483	19,791	1,573,260	12,579	11,918	173,695	68,612
2018	3,968,241	2.485	20,636	1,597,132	12,920	12,172	175,848	69,216
2019	4,037,435	2.483	20,775	1,626,117	12,776	12,198	178,036	68,514
2020	4,089,498	2.471	21,459	1,655,304	12,964	11,522	179,666	64,129
2021	4,130,929	2.448	21,192	1,687,471	12,558	11,785	182,195	64,686
2022	4,253,325	2.473	21,508	1,719,905	12,505	12,220	184,453	66,248
2023	4,308,553	2.457	21,750	1,753,583	12,403	12,450	186,524	66,749
FORECAST:								
2024	4,338,254	2.439	21,660	1,778,702	12,177	12,031	189,760	63,400
2025	4,383,772	2.420	21,850	1,811,476	12,062	12,232	192,439	63,564
2026	4,431,461	2.403	21,583	1,844,137	11,704	12,268	195,108	62,879
2027	4,481,068	2.388	21,717	1,876,494	11,573	12,383	197,753	62,617
2028	4,534,352	2.375	21,981	1,909,201	11,513	12,599	200,426	62,859
2029	4,591,824	2.364	22,446	1,942,396	11,556	12,849	203,140	63,252
2030	4,651,193	2.354	22,949	1,975,868	11,614	13,097	205,875	63,617
2031	4,711,426	2.345	23,390	2,009,137	11,642	13,322	208,595	63,865
2032	4,772,194	2.337	23,646	2,042,017	11,580	13,568	211,282	64,217
2033	4,830,765	2.329	24,422	2,074,180	11,774	13,847	213,911	64,734



**DUKE ENERGY FLORIDA**

**SCHEDULE 2.1.2**

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND

NUMBER OF CUSTOMERS BY CUSTOMER CLASS

**HIGH CASE FORECAST**

(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
<b>HISTORY:</b>								
2014	3,747,160	2.492	19,003	1,503,758	12,637	11,789	167,253	70,485
2015	3,794,138	2.489	19,932	1,524,605	13,074	12,070	169,147	71,359
2016	3,837,436	2.485	20,265	1,543,967	13,126	12,094	170,999	70,724
2017	3,906,975	2.483	19,791	1,573,260	12,579	11,918	173,695	68,612
2018	3,968,241	2.485	20,636	1,597,132	12,920	12,172	175,848	69,216
2019	4,037,435	2.483	20,775	1,626,117	12,776	12,198	178,036	68,514
2020	4,089,498	2.471	21,459	1,655,304	12,964	11,522	179,666	64,129
2021	4,130,929	2.448	21,192	1,687,471	12,558	11,785	182,195	64,686
2022	4,253,325	2.473	21,508	1,719,905	12,505	12,220	184,453	66,248
2023	4,308,553	2.457	21,750	1,753,583	12,403	12,450	186,524	66,749
<b>FORECAST:</b>								
2024	4,352,608	2.439	24,377	1,784,587	13,660	12,719	190,241	66,858
2025	4,413,787	2.420	24,708	1,823,879	13,547	12,977	193,453	67,080
2026	4,469,921	2.403	24,607	1,860,142	13,228	13,052	196,417	66,452
2027	4,526,156	2.388	24,808	1,895,375	13,088	13,213	199,296	66,301
2028	4,586,538	2.375	25,175	1,931,174	13,036	13,444	202,222	66,484
2029	4,651,704	2.364	25,613	1,967,726	13,017	13,650	205,210	66,516
2030	4,719,116	2.354	26,146	2,004,722	13,042	13,880	208,234	66,658
2031	4,786,708	2.345	26,627	2,041,240	13,045	14,107	211,218	66,790
2032	4,853,400	2.337	26,977	2,076,765	12,990	14,351	214,122	67,024
2033	4,916,610	2.329	27,723	2,111,039	13,133	14,617	216,923	67,382

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.1.3**

HISTORY AND FORECAST OF ENERGY CONSUMPTION AND

NUMBER OF CUSTOMERS BY CUSTOMER CLASS

**LOW CASE FORECAST**

(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
HISTORY:								
2014	3,747,160	2.492	19,003	1,503,758	12,637	11,789	167,253	70,485
2015	3,794,138	2.489	19,932	1,524,605	13,074	12,070	169,147	71,359
2016	3,837,436	2.485	20,265	1,543,967	13,126	12,094	170,999	70,724
2017	3,906,975	2.483	19,791	1,573,260	12,579	11,918	173,695	68,612
2018	3,968,241	2.485	20,636	1,597,132	12,920	12,172	175,848	69,216
2019	4,037,435	2.483	20,775	1,626,117	12,776	12,198	178,036	68,514
2020	4,089,498	2.471	21,459	1,655,304	12,964	11,522	179,666	64,129
2021	4,130,929	2.448	21,192	1,687,471	12,558	11,785	182,195	64,686
2022	4,253,325	2.473	21,508	1,719,905	12,505	12,220	184,453	66,248
2023	4,308,553	2.457	21,750	1,753,583	12,403	12,450	186,524	66,749
FORECAST:								
2024	4,336,457	2.439	19,369	1,777,965	10,894	11,583	189,700	61,060
2025	4,377,461	2.420	19,473	1,808,868	10,765	11,679	192,226	60,757
2026	4,415,587	2.403	19,370	1,837,531	10,541	11,828	194,569	60,792
2027	4,453,353	2.388	19,550	1,864,888	10,483	12,021	196,805	61,082
2028	4,496,433	2.375	19,840	1,893,235	10,479	12,251	199,121	61,527
2029	4,546,275	2.364	20,183	1,923,128	10,495	12,459	201,565	61,811
2030	4,600,010	2.354	20,572	1,954,125	10,528	12,693	204,098	62,191
2031	4,655,643	2.345	20,909	1,985,349	10,532	12,908	206,650	62,464
2032	4,711,960	2.337	21,129	2,016,243	10,479	13,139	209,175	62,812
2033	4,767,593	2.329	21,739	2,047,056	10,620	13,388	211,694	63,242

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.2.1**

**HISTORY AND FORECAST OF ENERGY CONSUMPTION AND  
NUMBER OF CUSTOMERS BY CUSTOMER CLASS**

**BASE CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	INDUSTRIAL						
	-----				STREET & HIGHWAY LIGHTING	OTHER SALES TO PUBLIC AUTHORITIES	TOTAL SALES TO ULTIMATE CONSUMERS
YEAR	GWh	AVERAGE NO. OF CUSTOMERS	AVERAGE KWh CONSUMPTION PER CUSTOMER	RAILROADS AND RAILWAYS GWh	GWh	GWh	GWh
	-----	-----	-----	-----	-----	-----	-----
HISTORY:							
2014	3,267	2,280	1,432,895	0	25	3,157	37,240
2015	3,293	2,243	1,468,123	0	24	3,234	38,553
2016	3,197	2,178	1,467,860	0	24	3,194	38,774
2017	3,120	2,137	1,459,991	0	24	3,171	38,023
2018	3,107	2,080	1,493,750	0	24	3,206	39,144
2019	2,963	2,025	1,463,210	0	24	3,227	39,187
2020	3,147	1,999	1,574,287	0	23	3,079	39,230
2021	3,292	1,978	1,664,307	0	24	3,158	39,451
2022	3,508	1,868	1,877,916	0	33	3,244	40,512
2023	3,396	1,773	1,915,141	0	31	3,205	40,832
FORECAST:							
2024	3,230	1,786	1,808,343	0	31	3,111	40,063
2025	3,360	1,765	1,903,655	0	31	3,185	40,658
2026	3,423	1,758	1,946,910	0	30	3,185	40,489
2027	3,453	1,756	1,966,388	0	29	3,196	40,777
2028	3,507	1,759	1,993,696	0	29	3,220	41,336
2029	3,500	1,762	1,986,265	0	28	3,234	42,057
2030	3,509	1,764	1,989,180	0	28	3,249	42,832
2031	3,515	1,767	1,989,291	0	27	3,239	43,493
2032	3,523	1,772	1,987,977	0	26	3,232	43,995
2033	3,288	1,776	1,851,436	0	26	3,231	44,815

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.2.2**

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

**HIGH CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	INDUSTRIAL						
		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
YEAR	GWh	CUSTOMERS	PER CUSTOMER	GWh	GWh	GWh	GWh
HISTORY:							
2014	3,267	2,280	1,432,895	0	25	3,157	37,240
2015	3,293	2,243	1,468,123	0	24	3,234	38,553
2016	3,197	2,178	1,467,860	0	24	3,194	38,774
2017	3,120	2,137	1,459,991	0	24	3,171	38,023
2018	3,107	2,080	1,493,750	0	24	3,206	39,144
2019	2,963	2,025	1,463,210	0	24	3,227	39,187
2020	3,147	1,999	1,574,287	0	23	3,079	39,230
2021	3,292	1,978	1,664,307	0	24	3,158	39,451
2022	3,508	1,868	1,877,916	0	33	3,244	40,512
2023	3,396	1,773	1,915,141	0	31	3,205	40,832
FORECAST:							
2024	3,266	1,786	1,828,571	0	31	3,177	43,570
2025	3,398	1,765	1,924,953	0	31	3,251	44,363
2026	3,460	1,758	1,967,978	0	30	3,249	44,398
2027	3,489	1,756	1,986,894	0	29	3,254	44,794
2028	3,543	1,759	2,014,133	0	29	3,275	45,465
2029	3,536	1,762	2,006,629	0	28	3,277	46,104
2030	3,545	1,764	2,009,498	0	28	3,284	46,883
2031	3,551	1,767	2,009,524	0	27	3,268	47,580
2032	3,558	1,772	2,008,105	0	26	3,254	48,168
2033	3,324	1,776	1,871,458	0	26	3,246	48,936

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.2.3**

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

**LOW CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	INDUSTRIAL						
		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
YEAR	GWh	CUSTOMERS	PER CUSTOMER	GWh	GWh	GWh	GWh
HISTORY:							
2014	3,267	2,280	1,432,895	0	25	3,157	37,240
2015	3,293	2,243	1,468,123	0	24	3,234	38,553
2016	3,197	2,178	1,467,860	0	24	3,194	38,774
2017	3,120	2,137	1,459,991	0	24	3,171	38,023
2018	3,107	2,080	1,493,750	0	24	3,206	39,144
2019	2,963	2,025	1,463,210	0	24	3,227	39,187
2020	3,147	1,999	1,574,287	0	23	3,079	39,230
2021	3,292	1,978	1,664,307	0	24	3,158	39,451
2022	3,508	1,868	1,877,916	0	33	3,244	40,512
2023	3,396	1,773	1,915,141	0	31	3,205	40,832
FORECAST:							
2024	3,202	1,786	1,792,981	0	31	3,030	37,216
2025	3,334	1,765	1,888,814	0	31	3,098	37,615
2026	3,400	1,758	1,934,233	0	30	3,086	37,715
2027	3,432	1,756	1,954,492	0	29	3,089	38,122
2028	3,487	1,759	1,982,346	0	29	3,106	38,712
2029	3,480	1,762	1,974,753	0	28	3,118	39,268
2030	3,488	1,764	1,977,382	0	28	3,134	39,914
2031	3,494	1,767	1,977,407	0	27	3,116	40,454
2032	3,502	1,772	1,976,094	0	26	3,102	40,898
2033	3,267	1,776	1,839,499	0	26	3,094	41,515

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.3.1**

**HISTORY AND FORECAST OF ENERGY CONSUMPTION AND  
NUMBER OF CUSTOMERS BY CUSTOMER CLASS**

**BASE CASE FORECAST**

(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
HISTORY:					
2014	1,333	2,402	40,975	25,800	1,699,091
2015	1,243	2,484	42,280	25,866	1,721,861
2016	1,803	2,277	42,854	26,005	1,743,149
2017	2,196	2,700	42,919	26,248	1,775,340
2018	2,304	2,776	44,224	26,504	1,801,564
2019	2,910	2,704	44,801	26,707	1,832,885
2020	2,887	2,697	44,814	26,845	1,863,814
2021	3,302	2,311	45,064	27,082	1,898,726
2022	3,673	1,956	46,141	26,834	1,933,060
2023	1,396	1,821	44,049	26,343	1,968,222
FORECAST:					
2024	1,119	2,237	43,418	26,304	1,996,552
2025	904	1,956	43,519	26,402	2,032,082
2026	904	2,190	43,584	26,501	2,067,504
2027	900	2,098	43,775	26,586	2,102,589
2028	889	2,279	44,504	26,680	2,138,066
2029	887	2,177	45,121	26,765	2,174,063
2030	887	2,258	45,977	26,847	2,210,354
2031	70	2,260	45,824	26,926	2,246,425
2032	71	2,536	46,602	27,014	2,282,085
2033	70	2,209	47,094	27,110	2,316,977

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.3.2**

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

**HIGH CASE FORECAST**

(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
HISTORY:					
2014	1,333	2,402	40,975	25,800	1,699,091
2015	1,243	2,484	42,280	25,866	1,721,861
2016	1,803	2,277	42,854	26,005	1,743,149
2017	2,196	2,700	42,919	26,248	1,775,340
2018	2,304	2,776	44,224	26,504	1,801,564
2019	2,910	2,704	44,801	26,707	1,832,885
2020	2,887	2,697	44,814	26,845	1,863,814
2021	3,302	2,311	45,064	27,082	1,898,726
2022	3,673	1,956	46,141	26,834	1,933,060
2023	1,396	1,821	44,049	26,343	1,968,222
FORECAST:					
2024	1,119	2,799	47,488	26,108	2,002,722
2025	904	2,584	47,852	26,148	2,045,245
2026	904	2,775	48,077	26,243	2,084,560
2027	900	2,731	48,425	26,321	2,122,748
2028	889	2,894	49,248	26,401	2,161,556
2029	887	2,823	49,814	26,432	2,201,130
2030	887	2,902	50,671	26,474	2,241,194
2031	70	2,922	50,572	26,524	2,280,749
2032	71	3,136	51,375	26,570	2,319,229
2033	70	2,905	51,911	26,626	2,356,364

**DUKE ENERGY FLORIDA**

**SCHEDULE 2.3.3**

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

**LOW CASE FORECAST**

(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
HISTORY:					
2014	1,333	2,402	40,975	25,800	1,699,091
2015	1,243	2,484	42,280	25,866	1,721,861
2016	1,803	2,277	42,854	26,005	1,743,149
2017	2,196	2,700	42,919	26,248	1,775,340
2018	2,304	2,776	44,224	26,504	1,801,564
2019	2,910	2,704	44,801	26,707	1,832,885
2020	2,887	2,697	44,814	26,845	1,863,814
2021	3,302	2,311	45,064	27,082	1,898,726
2022	3,673	1,956	46,141	26,834	1,933,060
2023	1,396	1,821	44,049	26,343	1,968,222
FORECAST:					
2024	1,119	1,760	40,094	26,056	1,995,507
2025	904	1,512	40,031	26,062	2,028,921
2026	904	1,688	40,308	26,038	2,059,896
2027	900	1,640	40,662	26,071	2,089,520
2028	889	1,782	41,383	26,118	2,120,233
2029	887	1,701	41,856	26,217	2,152,672
2030	887	1,762	42,564	26,318	2,186,305
2031	70	1,770	42,294	26,364	2,220,130
2032	71	1,961	42,929	26,405	2,253,595
2033	70	1,732	43,317	26,471	2,286,997



**DUKE ENERGY FLORIDA**

**SCHEDULE 3.1.1**

**HISTORY AND FORECAST OF SUMMER PEAK DEMAND (MW)**

**BASE CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL	RESIDENTIAL	COMM. / IND.	COMM. / IND.	OTHER	NET FIRM DEMAND
					LOAD MANAGEMENT	CONSERVATION	LOAD MANAGEMENT	CONSERVATION	DEMAND REDUCTIONS	
<b>HISTORY:</b>										
2014	10,067	814	9,253	232	355	404	108	313	132	8,523
2015	10,058	772	9,286	303	360	435	124	324	80	8,431
2016	10,530	893	9,637	235	366	466	100	339	80	8,946
2017	10,220	808	9,412	203	342	498	95	349	80	8,653
2018	10,271	812	9,459	257	386	532	83	387	80	8,545
2019	11,029	1021	10,008	230	394	566	86	414	80	9,260
2020	10,765	901	9,864	250	393	599	83	440	80	8,921
2021	10,835	1,010	9,825	375	394	623	85	451	80	8,826
2022	11,012	1,045	9,966	341	361	513	85	441	80	9,190
2023	11,357	827	10,530	476	352	550	88	459	80	9,352
<b>FORECAST:</b>										
2024	10,958	730	10,228	402	358	566	91	461	80	9,000
2025	10,824	451	10,372	402	364	581	94	467	80	8,836
2026	10,805	451	10,354	402	370	593	97	473	80	8,790
2027	10,822	451	10,371	402	376	605	100	477	80	8,781
2028	10,969	451	10,518	402	377	618	103	480	80	8,908
2029	11,174	451	10,723	402	378	630	107	484	80	9,093
2030	11,361	451	10,910	402	379	642	110	488	80	9,260
2031	11,493	401	11,093	402	380	653	113	492	80	9,374
2032	11,733	401	11,332	402	381	663	116	496	80	9,595
2033	11,967	401	11,566	402	382	674	119	499	80	9,811

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

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 3.1.2**

**HISTORY AND FORECAST OF SUMMER PEAK DEMAND (MW)**

**HIGH CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL	RESIDENTIAL	COMM. / IND.	COMM. / IND.	OTHER	NET FIRM DEMAND
					LOAD MANAGEMENT	CONSERVATION	LOAD MANAGEMENT	CONSERVATION	DEMAND REDUCTIONS	
<b>HISTORY:</b>										
2014	10,067	814	9,253	232	355	404	108	313	132	8,523
2015	10,058	772	9,286	303	360	435	124	324	80	8,431
2016	10,530	893	9,637	235	366	466	100	339	80	8,946
2017	10,220	808	9,412	203	342	498	95	349	80	8,653
2018	10,271	812	9,459	257	386	532	83	387	80	8,545
2019	11,029	1,021	10,008	230	394	566	86	414	80	9,260
2020	10,765	901	9,864	250	393	599	83	440	80	8,921
2021	10,835	1,010	9,825	375	394	623	85	451	80	8,826
2022	11,012	1,045	9,966	341	361	513	85	441	80	9,190
2023	11,357	827	10,530	476	352	550	88	459	80	9,352
<b>FORECAST:</b>										
2024	11,456	730	10,726	402	358	566	91	461	80	9,498
2025	11,362	451	10,911	402	364	581	94	467	80	9,375
2026	11,371	451	10,920	402	370	593	97	473	80	9,356
2027	11,415	451	10,964	402	376	605	100	477	80	9,375
2028	11,575	451	11,124	402	377	618	103	480	80	9,514
2029	11,751	451	11,300	402	378	630	107	484	80	9,670
2030	11,947	451	11,496	402	379	642	110	488	80	9,847
2031	12,461	401	12,060	402	380	653	113	492	80	10,341
2032	12,314	401	11,913	402	381	663	116	496	80	10,176
2033	12,555	401	12,154	402	382	674	119	499	80	10,399

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

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 3.1.3**

HISTORY AND FORECAST OF SUMMER PEAK DEMAND (MW)

**LOW CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL	RESIDENTIAL	COMM. / IND.	COMM. / IND.	OTHER	NET FIRM
					LOAD	CONSERVATION	LOAD	CONSERVATION	DEMAND	DEMAND
<b>HISTORY:</b>										
2014	10,067	814	9,253	232	355	404	108	313	132	8,523
2015	10,058	772	9,286	303	360	435	124	324	80	8,431
2016	10,530	893	9,637	235	366	466	100	339	80	8,946
2017	10,220	808	9,412	203	342	498	95	349	80	8,653
2018	10,271	812	9,459	257	386	532	83	387	80	8,545
2019	11,029	1,021	10,008	230	394	566	86	414	80	9,260
2020	10,765	901	9,864	250	393	599	83	440	80	8,921
2021	10,835	1,010	9,825	375	394	623	85	451	80	8,826
2022	11,012	1,045	9,966	341	361	513	85	441	80	9,190
2023	11,357	827	10,530	476	352	550	88	459	80	9,352
<b>FORECAST:</b>										
2024	10,505	730	9,776	402	358	566	91	461	80	8,547
2025	10,360	451	9,909	402	364	581	94	467	80	8,373
2026	10,391	451	9,940	402	370	593	97	473	80	8,376
2027	10,444	451	9,992	402	376	605	100	477	80	8,403
2028	10,592	451	10,141	402	377	618	103	480	80	8,532
2029	10,774	451	10,323	402	378	630	107	484	80	8,693
2030	10,926	451	10,475	402	379	642	110	488	80	8,825
2031	11,407	401	11,006	402	380	653	113	492	80	9,287
2032	11,621	401	11,220	402	381	663	116	496	80	9,483
2033	11,476	401	11,075	402	382	674	119	499	80	9,320

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

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 3.2.1**

**HISTORY AND FORECAST OF WINTER PEAK DEMAND (MW)**

**BASE CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL		COMM. / IND.		OTHER DEMAND REDUCTIONS	NET FIRM DEMAND
					LOAD MANAGEMENT	RESIDENTIAL CONSERVATION	LOAD MANAGEMENT	COMM. / IND. CONSERVATION		
<b>HISTORY:</b>										
2013/14	9,467	658	8,809	257	654	785	101	229	219	7,222
2014/15	10,648	1035	9,613	273	658	815	109	236	237	8,319
2015/16	9,678	1275	8,403	207	675	845	131	240	170	7,409
2016/17	8,739	701	8,038	191	695	878	79	243	165	6,489
2017/18	11,559	1071	10,488	244	699	913	79	246	196	9,182
2018/19	8,527	572	7,955	239	711	948	82	251	164	6,132
2019/20	9,725	613	9,112	292	670	982	80	256	177	7,268
2020/21	9,654	679	8,975	319	671	1,006	82	260	175	7,141
2021/22	10,594	1,038	9,556	317	668	1,013	83	261	195	8,056
2022/23	10,474	1,047	9,426	317	638	975	83	262	194	8,005
<b>FORECAST:</b>										
2023/24	11,506	852	10,654	388	646	1,055	87	263	195	8,872
2024/25	11,787	1,052	10,735	388	654	1,081	90	266	196	9,112
2025/26	11,833	1,052	10,781	388	662	1,101	93	268	196	9,124
2026/27	11,908	1,052	10,855	388	670	1,120	96	270	197	9,165
2027/28	11,452	451	11,001	388	671	1,141	100	273	198	8,682
2028/29	11,594	451	11,143	388	672	1,161	103	276	200	8,795
2029/30	11,784	451	11,333	388	673	1,180	106	278	202	8,957
2030/31	11,870	401	11,469	388	674	1,197	109	280	204	9,017
2031/32	12,002	401	11,601	388	675	1,215	112	282	205	9,125
2032/33	12,112	401	11,711	388	676	1,232	115	284	206	9,210

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

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 3.2.2**

HISTORY AND FORECAST OF WINTER PEAK DEMAND (MW)

**HIGH CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL		COMM. / IND.		OTHER DEMAND REDUCTIONS	NET FIRM DEMAND
					LOAD MANAGEMENT	RESIDENTIAL CONSERVATION	LOAD MANAGEMENT	COMM. / IND. CONSERVATION		
<b>HISTORY:</b>										
2013/14	9,467	658	8,809	257	654	785	101	229	219	7,222
2014/15	10,648	1,035	9,613	273	658	815	109	236	237	8,319
2015/16	9,678	1,275	8,403	207	675	845	131	240	170	7,409
2016/17	8,739	701	8,038	191	695	878	79	243	165	6,489
2017/18	11,559	1,071	10,488	244	699	913	79	246	196	9,182
2018/19	8,527	572	7,955	239	711	948	82	251	164	6,132
2019/20	9,725	613	9,112	292	670	982	80	256	177	7,268
2020/21	9,654	679	8,975	319	671	1,006	82	260	175	7,141
2021/22	10,594	1,038	9,556	317	668	1,013	83	261	195	8,056
2022/23	10,474	1,047	9,426	317	638	975	83	262	194	8,005
<b>FORECAST:</b>										
2023/24	13,301	852	12,449	388	646	1,055	87	263	195	10,667
2024/25	13,680	1,052	12,628	388	654	1,081	90	266	196	11,005
2025/26	13,779	1,052	12,727	388	662	1,101	93	268	196	11,070
2026/27	13,899	1,052	12,847	388	670	1,120	96	270	197	11,157
2027/28	13,491	451	13,039	388	671	1,141	100	273	198	10,720
2028/29	13,641	451	13,190	388	672	1,161	103	276	200	10,842
2029/30	13,836	451	13,385	388	673	1,180	106	278	202	11,009
2030/31	13,938	401	13,538	388	674	1,197	109	280	204	11,086
2031/32	14,083	401	13,682	388	675	1,215	112	282	205	11,205
2032/33	14,209	401	13,808	388	676	1,232	115	284	206	11,307

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

Col. (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 3.2.3**

HISTORY AND FORECAST OF WINTER PEAK DEMAND (MW)

**LOW CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(OTH)	(10)
YEAR	TOTAL	WHOLESALE	RETAIL	INTERRUPTIBLE	RESIDENTIAL		COMM. / IND.		OTHER DEMAND REDUCTIONS	NET FIRM DEMAND
					LOAD MANAGEMENT	RESIDENTIAL CONSERVATION	LOAD MANAGEMENT	COMM. / IND. CONSERVATION		
<b>HISTORY:</b>										
2013/14	9,467	658	8,809	257	654	785	101	229	219	7,222
2014/15	10,648	1,035	9,613	273	658	815	109	236	237	8,319
2015/16	9,678	1,275	8,403	207	675	845	131	240	170	7,409
2016/17	8,739	701	8,038	191	695	878	79	243	165	6,489
2017/18	11,559	1,071	10,488	244	699	913	79	246	196	9,182
2018/19	8,527	572	7,955	239	711	948	82	251	164	6,132
2019/20	9,725	613	9,112	292	670	982	80	256	177	7,268
2020/21	9,654	679	8,975	319	671	1,006	82	260	175	7,141
2021/22	10,594	1,038	9,556	317	668	1,013	83	261	195	8,056
2022/23	10,474	1,047	9,426	317	638	975	83	262	194	8,005
<b>FORECAST:</b>										
2023/24	9,330	852	8,478	388	646	1,055	87	263	195	6,696
2024/25	9,493	1,052	8,441	388	654	1,081	90	266	196	6,818
2025/26	9,559	1,052	8,507	388	662	1,101	93	268	196	6,850
2026/27	9,655	1,052	8,603	388	670	1,120	96	270	197	6,913
2027/28	9,187	451	8,736	388	671	1,141	100	273	198	6,416
2028/29	9,291	451	8,840	388	672	1,161	103	276	200	6,492
2029/30	9,423	451	8,972	388	673	1,180	106	278	202	6,596
2030/31	9,472	401	9,071	388	674	1,197	109	280	204	6,619
2031/32	9,567	401	9,166	388	675	1,215	112	282	205	6,689
2032/33	9,645	401	9,245	388	676	1,232	115	284	206	6,744

**Historical Values (2014 - 2023):**

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 (2024 - 2033):**

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 3.3.1**

**HISTORY AND FORECAST OF ANNUAL NET ENERGY FOR LOAD (GWh)**

**BASE CASE FORECAST**

(1)	(2)	(3)	(4)	(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 (%) *
<b>HISTORY:</b>									
2014	43,443	812	791	864	37,240	1,333	2,402	40,975	50.7
2015	44,552	848	829	595	38,553	1,243	2,484	42,280	50.9
2016	45,200	892	857	596	38,774	1,803	2,277	42,854	50.6
2017	45,318	933	871	595	38,024	2,196	2,699	42,919	52.7
2018	46,729	977	933	595	39,145	2,304	2,775	44,224	48.9
2019	47,385	1,017	972	595	39,187	2,910	2,704	44,801	51.3
2020	47,476	1,050	1,016	596	39,230	2,887	2,697	44,814	52.9
2021	47,786	1,100	1,027	595	39,451	3,302	2,311	45,064	53.1
2022	48,842	1,120	986	595	40,512	3,673	1,956	46,141	52.8
2023	46,805	1,168	996	595	40,832	1,392	1,821	44,046	49.0
<b>FORECAST:</b>									
2024	46,240	1,223	1,004	595	40,063	1,119	2,237	43,418	55.1
2025	46,392	1,259	1,018	596	40,658	904	1,956	43,519	54.4
2026	46,503	1,297	1,028	595	40,489	904	2,190	43,584	54.5
2027	46,743	1,337	1,036	595	40,777	900	2,098	43,775	54.5
2028	47,519	1,376	1,044	595	41,336	889	2,279	44,504	57.0
2029	48,183	1,413	1,053	596	42,057	887	2,177	45,121	56.5
2030	49,081	1,447	1,062	595	42,832	887	2,258	45,977	56.7
2031	48,970	1,481	1,070	595	43,493	70	2,260	45,824	55.8
2032	49,789	1,515	1,077	595	43,995	71	2,536	46,602	55.4
2033	50,322	1,547	1,085	596	44,815	70	2,209	47,094	54.6

\* Load Factors for historical years are calculated using the actual and projected annual peak.

**DUKE ENERGY FLORIDA**

**SCHEDULE 3.3.2**

HISTORY AND FORECAST OF ANNUAL NET ENERGY FOR LOAD (GWh)

**HIGH CASE FORECAST**

(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 (%) *
<b>HISTORY:</b>									
2014	43,443	812	791	864	37,240	1,333	2,402	40,975	50.7
2015	44,552	848	829	595	38,553	1,243	2,484	42,280	50.9
2016	45,200	892	857	596	38,774	1,803	2,277	42,854	50.6
2017	45,318	933	871	595	38,024	2,196	2,699	42,919	52.7
2018	46,729	977	933	595	39,145	2,304	2,775	44,224	48.9
2019	47,385	1,017	972	595	39,187	2,910	2,704	44,801	51.3
2020	47,476	1,050	1,016	596	39,230	2,887	2,697	44,814	52.9
2021	47,786	1,100	1,027	595	39,451	3,302	2,311	45,064	53.1
2022	48,842	1,120	986	595	40,512	3,673	1,956	46,141	52.8
2023	46,805	1,168	996	595	40,832	1,392	1,821	44,046	49.0
<b>FORECAST:</b>									
2024	50,309	1,223	1,004	595	43,570	1,119	2,799	47,488	50.8
2025	50,724	1,259	1,018	595	44,363	904	2,584	47,852	49.6
2026	50,998	1,297	1,028	596	44,398	904	2,775	48,077	49.4
2027	51,392	1,337	1,036	595	44,794	900	2,731	48,425	49.5
2028	52,263	1,376	1,044	595	45,465	889	2,894	49,248	52.4
2029	52,876	1,413	1,053	596	46,104	887	2,823	49,814	52.3
2030	53,776	1,447	1,062	595	46,883	887	2,902	50,671	52.5
2031	53,719	1,481	1,070	595	47,580	70	2,922	50,572	52.1
2032	54,562	1,515	1,077	595	48,168	71	3,136	51,375	52.3
2033	55,139	1,547	1,085	596	48,936	70	2,905	51,911	52.3

\* Load Factors for historical years are calculated using the actual and projected annual peak.



**DUKE ENERGY FLORIDA**

**SCHEDULE 3.3.3**

**HISTORY AND FORECAST OF ANNUAL NET ENERGY FOR LOAD (GWh)**

**LOW CASE FORECAST**

(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 (%) *
<b>HISTORY:</b>									
2014	43,443	812	791	864	37,240	1,333	2,402	40,975	50.7
2015	44,552	848	829	595	38,553	1,243	2,484	42,280	50.9
2016	45,200	892	857	596	38,774	1,803	2,277	42,854	50.6
2017	45,318	933	871	595	38,024	2,196	2,699	42,919	52.7
2018	46,729	977	933	595	39,145	2,304	2,775	44,224	48.9
2019	47,385	1,017	972	595	39,187	2,910	2,704	44,801	51.3
2020	47,476	1,050	1,016	596	39,230	2,887	2,697	44,814	52.9
2021	47,786	1,100	1,027	595	39,451	3,302	2,311	45,064	53.1
2022	48,842	1,120	986	595	40,512	3,673	1,956	46,141	52.8
2023	46,805	1,168	996	595	40,832	1,392	1,821	44,046	49.0
<b>FORECAST:</b>									
2024	42,916	1,223	1,004	595	37,216	1,119	1,760	40,094	53.5
2025	42,904	1,259	1,018	596	37,615	904	1,512	40,031	54.4
2026	43,227	1,297	1,028	595	37,715	904	1,688	40,308	54.9
2027	43,629	1,337	1,036	595	38,122	900	1,640	40,662	55.2
2028	44,398	1,376	1,044	595	38,712	889	1,782	41,383	55.4
2029	44,918	1,413	1,053	596	39,268	887	1,701	41,856	54.8
2030	45,668	1,447	1,062	595	39,914	887	1,762	42,564	55.1
2031	45,441	1,481	1,070	595	40,454	70	1,770	42,294	52.0
2032	46,116	1,515	1,077	595	40,898	71	1,961	42,929	51.7
2033	46,544	1,547	1,085	596	41,515	70	1,732	43,317	52.9

\* Load Factors for historical years are calculated using the actual and projected annual peak.

**DUKE ENERGY FLORIDA**

**SCHEDULE 4.1**

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

(1) MONTH	(2) ACTUAL		(4) FORECAST		(6) FORECAST	
	2023		2024		2025	
	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh
JANUARY	7,840	3,128	<b>10,109</b>	3,205	<b>10,360</b>	3,239
FEBRUARY	6,657	2,797	7,984	2,772	8,190	2,784
MARCH	7,608	3,320	7,559	3,170	7,694	3,180
APRIL	7,845	3,457	7,963	3,342	7,685	3,360
MAY	8,354	3,781	8,773	3,832	8,532	3,863
JUNE	9,322	4,188	9,099	4,171	8,769	4,138
JULY	9,725	4,767	9,758	4,345	9,448	4,304
<b>AUGUST</b>	<b>10,268</b>	4,978	<b>9,851</b>	4,453	<b>9,696</b>	4,469
SEPTEMBER	9,281	4,152	8,897	3,988	8,685	4,013
OCTOBER	7,859	3,455	8,492	3,715	8,277	3,723
NOVEMBER	6,799	3,010	6,905	3,111	6,735	3,136
<u>DECEMBER</u>	5,936	<u>3,014</u>	7,965	<u>3,314</u>	8,210	<u>3,310</u>
TOTAL		44,046		43,418		43,519

NOTE: Recorded Net Peak demands and NEL include off-system wholesale contracts.  
December 2022 is the 2023 winter peak 8110 MW.

**DUKE ENERGY FLORIDA**

**SCHEDULE 4.2**

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

(1) MONTH	(2) ACTUAL		(4) FORECAST		(6) FORECAST	
	2023		2024		2025	
	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh
JANUARY	7,840	3,128	<b>11,904</b>	3,648	<b>12,253</b>	3,713
FEBRUARY	6,657	2,797	9,231	3,210	9,507	3,250
MARCH	7,608	3,320	8,617	3,668	8,806	3,702
APRIL	7,845	3,457	8,545	3,668	8,369	3,707
MAY	8,354	3,781	9,276	4,055	9,078	4,107
JUNE	9,322	4,188	9,625	4,394	9,338	4,382
JULY	9,725	4,767	10,277	4,544	10,014	4,524
<b>AUGUST</b>	10,268	4,978	<b>10,349</b>	4,643	<b>10,235</b>	4,678
SEPTEMBER	9,281	4,152	9,356	4,171	9,180	4,213
OCTOBER	7,859	3,455	9,141	4,049	8,962	4,076
NOVEMBER	6,799	3,010	7,664	3,517	7,569	3,560
<u>DECEMBER</u>	5,936	<u>3,014</u>	9,795	<u>3,921</u>	10,090	<u>3,939</u>
TOTAL		44,046		47,488		47,852

NOTE: Recorded Net Peak demands and NEL include off-system wholesale contracts.  
December 2022 is the 2023 winter peak 8110 MW.

**SCHEDULE 4.3**  
**PREVIOUS YEAR ACTUAL AND TWO-YEAR FORECAST OF PEAK DEMAND**  
**AND NET ENERGY FOR LOAD BY MONTH**  
**LOW CASE FORECAST**

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ACTUAL		FORECAST		FORECAST	
	----- 2023 -----		----- 2024 -----		----- 2025 -----	
MONTH	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh	PEAK DEMAND MW	NEL GWh
-----	-----	-----	-----	-----	-----	-----
JANUARY	7,840	3,128	<b>7,933</b>	2,860	<b>8,066</b>	2,852
FEBRUARY	6,657	2,797	6,902	2,390	7,046	2,374
MARCH	7,608	3,320	6,761	2,809	6,836	2,790
APRIL	7,845	3,457	7,558	3,119	7,239	3,114
MAY	8,354	3,781	8,402	3,673	8,120	3,684
JUNE	9,322	4,188	8,659	3,977	8,315	3,928
JULY	9,725	4,767	9,307	4,162	8,976	4,111
<b>AUGUST</b>	<b>10,268</b>	4,978	<b>9,398</b>	4,265	<b>9,233</b>	4,277
SEPTEMBER	9,281	4,152	8,469	3,799	8,255	3,824
OCTOBER	7,859	3,455	7,973	3,451	7,761	3,461
NOVEMBER	6,799	3,010	6,321	2,776	6,128	2,802
<u>DECEMBER</u>	5,936	<u>3,014</u>	6,423	<u>2,816</u>	6,706	<u>2,812</u>
TOTAL		44,046		40,094		40,031

NOTE: Recorded Net Peak demands and NEL include off-system wholesale contracts.  
December 2022 is the 2023 winter peak 8110 MW.

## **FUEL REQUIREMENTS AND ENERGY SOURCES**

DEF's two-year actual and ten-year 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. Although DEF's fuel mix continues to rely on an increasing amount of natural gas to meet its generation needs, DEF continues to maintain alternate fuel supplies including long term operation of some coal fired facilities, adequate supplies of oil for dual fuel back up and increasing amounts of renewable generation particularly from solar generation. Projections shown in Schedules 5 and 6 reflect the Base Load and Energy Forecasts.

**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	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
(1)	NUCLEAR		TRILLION BTU	0	0	0	0	0	0	0	0	0	0	0	0
(2)	COAL		1,000 TON	2,117	1,825	1,045	927	815	768	702	695	789	814	768	927
(3)	RESIDUAL	TOTAL	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(4)		STEAM	1,000 BBL	0	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	312	124	26	19	16	27	47	36	29	33	36	37
(9)		STEAM	1,000 BBL	48	54	11	9	12	14	10	12	13	9	11	14
(10)		CC	1,000 BBL	123	0	0	0	0	0	0	0	0	0	0	0
(11)		CT	1,000 BBL	141	70	15	10	4	14	37	24	16	24	24	24
(12)		DIESEL	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(13)	NATURAL GAS	TOTAL	1,000 MCF	271,484	265,288	252,983	255,245	253,111	248,403	247,856	244,586	238,530	229,462	228,043	223,608
(14)		STEAM	1,000 MCF	25,066	21,181	15,119	13,755	10,865	8,764	11,038	13,379	10,949	11,540	12,064	11,894
(15)		CC	1,000 MCF	238,711	234,659	233,195	236,804	237,822	234,218	231,497	225,655	222,892	211,949	209,562	204,652
(16)		CT	1,000 MCF	7,708	9,448	4,670	4,686	4,425	5,421	5,321	5,552	4,689	5,973	6,418	7,062
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	0	0	0	0	0	0	0	0	0	0
(18.1)	OTHER, NATURAL GAS	ANNUAL FIRM INTERCHANGE, CT	1,000 MCF	N/A	N/A	2,420	2,650	1,639	601	0	0	0	0	0	0
(19)	OTHER, COAL	ANNUAL FIRM INTERCHANGE, STEAM	1,000 TON	N/A	N/A	0	0	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	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
(1)	ANNUAL FIRM INTERCHANGE 1/		GWh	1,203	60	237	260	161	60	18	3	6	15	7	2
(2)	NUCLEAR		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(3)	COAL		GWh	4,375	3,829	2,157	1,920	1,639	1,539	1,370	1,395	1,569	1,617	1,519	1,873
(4)	RESIDUAL	TOTAL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(5)		STEAM	GWh	0	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	146	29	7	5	2	6	17	11	7	10	11	10
(10)		STEAM	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWh	91	0	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWh	55	29	7	5	2	6	17	11	7	10	11	10
(13)		DIESEL	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(14)	NATURAL GAS	TOTAL	GWh	36,423	35,526	36,389	37,056	37,034	36,479	36,197	35,521	34,714	33,083	32,668	31,801
(15)		STEAM	GWh	2,249	1,737	1,337	1,205	948	749	942	1,137	916	992	1,032	1,004
(16)		CC	GWh	33,607	32,996	34,577	35,374	35,631	35,193	34,722	33,831	33,331	31,509	31,014	30,123
(17)		CT	GWh	567	792	475	477	456	537	533	553	467	582	622	674
(18)	OTHER 2/														
	QF PURCHASES		GWh	1,769	1,814	818	493	0	0	0	0	0	0	0	0
	RENEWABLES OTHER		GWh	0	0	0	0	0	0	0	0	0	0	0	0
	RENEWABLES MSW		GWh	645	624	556	71	73	73	73	73	72	73	73	71
	RENEWABLES BIOMASS		GWh	0	0	0	0	0	0	0	0	0	0	0	0
	RENEWABLES SOLAR		GWh	1,581	2,165	3,255	3,714	4,674	5,630	6,852	8,161	9,670	11,097	12,401	13,415
	BATTERIES		GWh	0	0	0	0	0	-11	-22	-43	-61	-72	-76	-78
	IMPORT FROM OUT OF STATE		GWh	0	0	0	0	0	0	0	0	0	0	0	0
	EXPORT TO OUT OF STATE		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(19)	NET ENERGY FOR LOAD		GWh	46,141	44,046	43,418	43,519	43,584	43,775	44,504	45,121	45,977	45,824	46,602	47,094

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-											
	<u>ENERGY SOURCES</u>	<u>UNITS</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	
(1)	ANNUAL FIRM INTERCHANGE 1/	%	2.6%	0.1%	0.5%	0.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(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	%	9.5%	8.7%	5.0%	4.4%	3.8%	3.5%	3.1%	3.1%	3.4%	3.5%	3.3%	4.0%	
(4)	RESIDUAL	TOTAL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(5)		STEAM	%	0.0%	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%	
(7)		CT	%	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%	
(9)	DISTILLATE	TOTAL	%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(10)		STEAM	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(11)		CC	%	0.2%	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%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(13)		DIESEL	%	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	%	78.9%	80.7%	83.8%	85.1%	85.0%	83.3%	81.3%	78.7%	75.5%	72.2%	70.1%	
(15)		STEAM	%	4.9%	3.9%	3.1%	2.8%	2.2%	1.7%	2.1%	2.5%	2.0%	2.2%	2.1%	
(16)		CC	%	72.8%	74.9%	79.6%	81.3%	81.8%	80.4%	78.0%	75.0%	72.5%	68.8%	66.6%	
(17)		CT	%	1.2%	1.8%	1.1%	1.1%	1.0%	1.2%	1.2%	1.2%	1.0%	1.3%	1.4%	
(18)	OTHER 2/														
	QF PURCHASES	%	3.8%	4.1%	1.9%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	RENEWABLES OTHER	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	RENEWABLES MSW	%	1.4%	1.4%	1.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	
	RENEWABLES BIOMASS	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	RENEWABLES SOLAR	%	3.4%	4.9%	7.5%	8.5%	10.7%	12.9%	15.4%	18.1%	21.0%	24.2%	26.6%	28.5%	
	BATTERIES	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.2%	-0.2%	
	IMPORT FROM OUT OF STATE	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	EXPORT TO OUT OF STATE	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
(19)	NET ENERGY FOR LOAD	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

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

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



## **FORECASTING METHODS AND PROCEDURES**

### **INTRODUCTION**

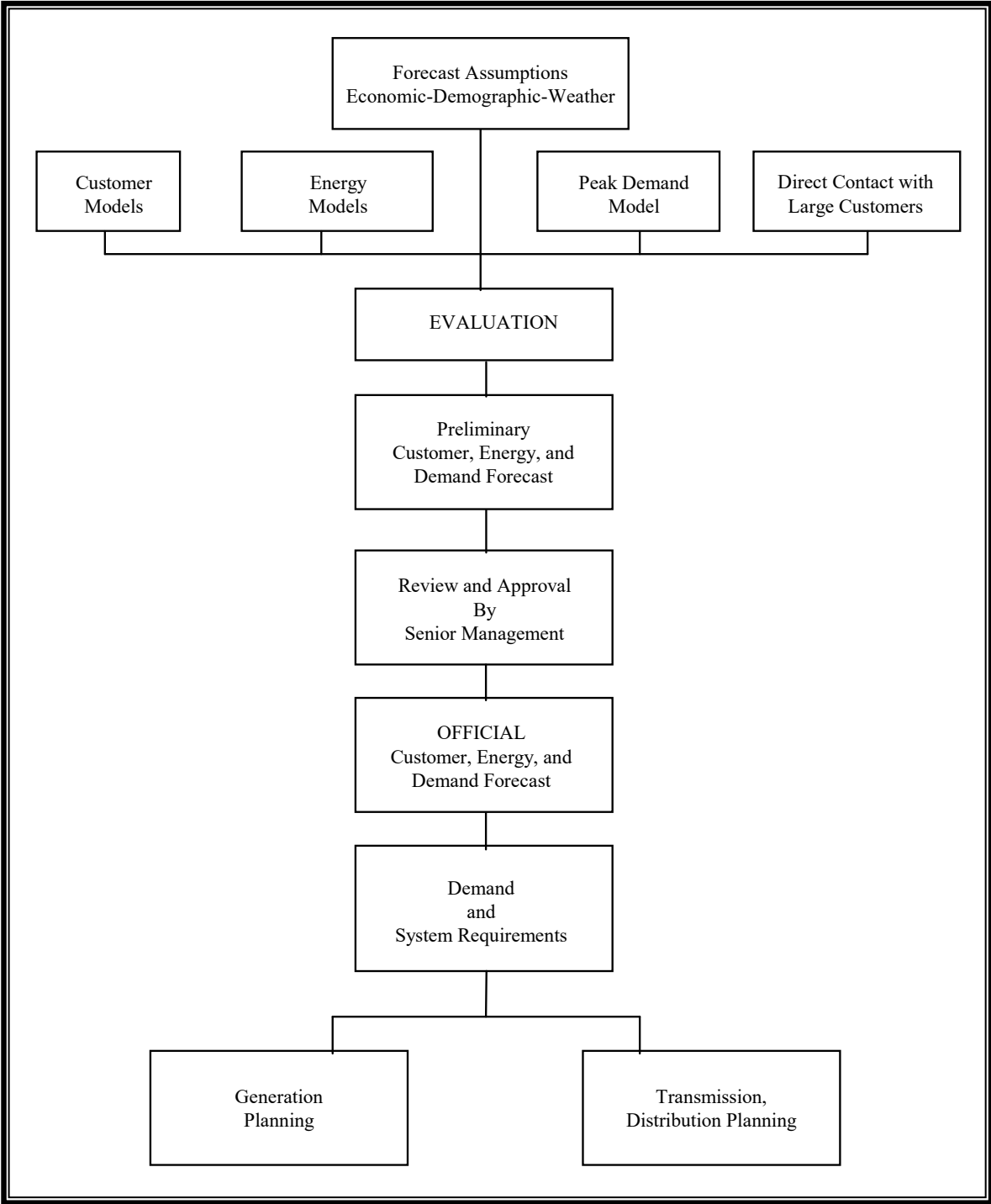
Accurate forecasts of long-range electric energy consumption, customer growth, and peak demand are essential elements in electric utility planning. Accurate projections of a utility's future load growth require a forecasting methodology with the ability to account for a variety of factors influencing electric 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 several 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 30-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 30-year average of calendar and billing cycle weighted monthly heating and cooling degree-days (HDD and CDD). The expected consumption period read dates for each projected billing cycle determines the exact historical dates for developing the 30-year average weather condition each month. Each class displays different weather-sensitive base temperatures from which degree day (DD) values begin to accumulate. Seasonal and monthly peak demand projections are based on a 30-year historical average of system-weighted degree days using the “Itron Rank-Sort Normal” approach which takes annual weather extremes into account as well as the date and hour of occurrence.
2. The DEF customer forecast is based upon Moody’s historical and forecasted population estimates of the 29 counties served by DEF. National and Florida economic projections produced by Moody’s Analytics in their July 2023 forecast, along with Energy Information Administration (EIA) 2023 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. Two major customers accounted for approximately 39% of the industrial class MWh sales in 2023. These energy-intensive “crop nutrient” producers 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, international trade pacts and U.S. environmental regulations. 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. Any increase in self-service generation will act to reduce energy

requirements from DEF. An upside risk to this projection lies in the price of energy, especially low natural gas price, which is a major cost in mining and producing phosphoric fertilizers. DEF has begun to assume a decline in Phosphate sector energy consumption late in the planning horizon as mining product becomes scarce in the areas currently mined.

4. DEF has supplied capacity and energy service to wholesale customers on a “full” and “partial” requirement basis for many years. Many Sales for Resale Customers have moved to other suppliers for their needs or have begun to self-generate. What remains are Partial Requirements (PR) contracted loads with the Reedy Creek Improvement District (RCID) and Seminole Electric Cooperative, Inc. (SECI). The forecast reflects the current contractual obligations based on the nature of the stratified load being requested, plus their ability to receive dispatched energy from power marketers any time it is more economical for them to do so. All contracts are projected to expire in the specific year designated in the respective contracts.
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 goals as stated in Docket No. 20190018-EG.
7. This forecast reflects impacts from both Plug-in Hybrid Electric Vehicle (PHEV) and behind the meter customer-owned renewable generation which is mostly solar photovoltaic (PV) installations on energy and peak demand. PHEV customer penetration levels, which are expected to be a small share of the total DEF service area vehicle stock over the planning horizon, incorporates an EPRI Model view that includes gasoline price expectations. DEF customer PV penetration levels are expected to continue to grow over the planning horizon and the forecast incorporates a view on equipment and electric price impacts on customer use.
8. 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.

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.

## **ECONOMIC ASSUMPTIONS**

The economic outlook for this forecast was developed in the summer of 2023. As mentioned in the overview, in mid-2023 the U.S. continued to experience strong job growth, rising wages, and low unemployment. Inflation was receding in response to the Federal Reserve’s rate increases. The funds rate was considered sufficient to slow the economy’s growth and succeed in bringing inflation back to the Fed’s target by the fall of 2024. It is with this background that the DEF Customer, Energy and Peak Demand forecast was developed and the environment in which the Moody’s Analytics July 2023 U.S. forecast and Florida forecast was applied. Major assumptions are as follows:

- In Moody’s July 2023 outlook, an additional 25-basis point rate hike to the federal funds rate was incorporated at the July FOMC meeting. This brought the policy rate’s range to 5.25% to 5.5%. The first-rate cut was also pushed back from March to June 2024. The assumption was that the reduction in the Federal Reserve’s balance sheet would remain on autopilot.
- Recent U.S. bank failures were disconcerting to watch, but they were not symptomatic of a serious broader problem in the financial system. Policymakers’ aggressive response ensured the failures did not weaken the system or more than modestly undermine already-weak economic growth.
- Moody’s did not make any adjustments in light of the Supreme Court striking down President Biden’s student loan forgiveness plan. Moreover, the implications of the ruling for near-term growth were minimal. If the Supreme Court had upheld it, debt cancellation would have only boosted the level of real personal consumption expenditures by 0.1%.

- The ten-year U.S. Treasury peaked in the second quarter of 2024 just shy of 4%, as in the prior baseline.
- Moody’s expected strong oil demand growth—headlined by emerging economies and namely China—coupled with OPEC production cuts pushed up oil prices in the second half of the year.
- A full-employment economy is one with an unemployment rate around 3.5%, a 62.5% labor force participation rate, and a prime-age employment-to-population ratio in the range of 80%. The economy was at that level then.

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, birth rates, inflation and interest rates. Uncertainty surrounding specific weather anomalies (hurricanes or earthquakes), international crises such as wars or terrorist acts, or future pandemic events, are not explicitly designed into this projection. Thus, any situations of this variety will result in a deviation from this forecast.

### **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, demand response, 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. Internal company forecasts are used for projections of electricity price, weather conditions, the length of the billing month and rates of customer owned renewable and electric vehicle adoption. The external sources of data include Moody's Analytics forecasts of changes in population, demographics and economic conditions. The incorporation of residential and commercial "end-use" energy has been modeled as well. Surveys of residential appliance saturation and average efficiency performed by the company's Market Research department and the 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 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, average household size, 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 county level population projections, provided by Moody's, for counties in which DEF serves residential customers.

### ***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 the heating and cooling degree-day values. As in the residential sector, these variables interact 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 large 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 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, energy prices, and the average number of sales month billing days.

The industrial phosphate mining industry is modeled using customer-specific information with respect to anticipated market conditions. Since this sub-sector is comprised of only three customers, the forecast is dependent upon information received from direct customer contact. DEF Large Account Management employees 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. These Florida mining companies compete globally into a global market where farming conditions dictate the need for “crop nutrients”.

The projection of industrial accounts was not expected to decline as rapidly as it has in the previous ten years. The pace of “off-shoring” manufacturing jobs was expected to decline from past levels. Both the Trump and Biden administrations have favored the rebuilding of the American manufacturing sector, with the Biden administration adding a focus on carbon reduction. Also, the rapid increase in Florida population may recalibrate Florida’s competitiveness in “location analysis” studies performed by industry when determining site selection for new operations.

### ***Street Lighting***

Electricity sales to the street and highway lighting class are projected to decrease over the forecast period due to increased energy efficiency. The number of accounts has increased due to rate changes from the Public Authority class. 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, are projected to increase within the DEF's service area. This is a result of a growing economy and population representing a larger tax base. 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, energy prices and the sales month billing days, explains most of the 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. DEF serves partial requirement service (PR) to load serving customers such as Reedy Creek Improvement District. In each case, these customers contract with DEF for a specific level and type of stratified capacity (MW) needed to provide their particular electrical system with an appropriate level of reliability. The energy forecast for each contract is derived using information provided by the purchaser who better understands their needs. Electric energy growth and competitive market prices will dictate the amount of wholesale demand and energy throughout the forecast horizon.

## **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 total retail load, interruptible and curtailable tariff non-firm load, conservation and demand response program capability, wholesale demand, and company use demand.

Total retail load refers to projections of DEF retail monthly net peak demand before any activation of DEF's General Load Reduction Plan. The historical values of this series are constructed to show the size of DEF's 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 and the amounts of Base-Heating-Cooling load estimated by the monthly Itron models without the impacts of year-to-year variation in utility-sponsored DR programs. Monthly peaks are projected using the Itron SAE generated use patterns for both weather sensitive (cooling & heating) appliances and base load appliances calculated by class in the energy models. Daily and hourly models of applying DEF class-of-business load research survey data lead to class and total retail hourly load profiles when a 30-year normal weather template replaces actual weather. The projections of retail peak are the result of a monthly model driven by the summation of class base, heating and cooling energy interpolated 30-year normal weather pattern-driven load profile. The projection for the months of January (winter) and August (summer) are typically when the seasonal peaks occur. Energy conservation and direct load control estimates consistent with DEF's DSM goals that have been established by the FPSC are applied to 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. The Interruptible and Curtailable service (IS and CS) tariff load projection is developed from historic monthly trends, as well as the incorporation of specific projected information obtained from DEF's large industrial accounts on these tariffs by account executives. Developing this piece of the demand forecast allows for appropriate firm retail demand results in the total retail coincident peak demand projection.

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 seasonal demands.

DEF "company use" at the time of system peak is estimated using load research metering studies similar to potential firm retail. It is assumed to remain stable over the forecast horizon as it has historically.

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.

## **HIGH AND LOW SCENARIOS**

DEF has developed high and low scenarios around the base case energy sales and peak demand projections. Both scenarios incorporate historical variation in weather and economic conditions as well as service area population and household growth. Historical variation for economic driver variables selected in the base case energy sales models using the Moody's S1 & S3 (High/Low) scenarios. High and low weather variables were determined for the energy and peak weather variables (HDDs, CDDs, and monthly peak DDs) using actual 30-year weather conditions. Each weather variable used in the modeling process is ranked monthly from "high-to-low" degree days. The high (hottest or coldest) one-fourth of each variable is averaged and becomes a normal "High Case" weather condition. Similarly, the "mildest" one-fourth of each weather variable's 30 observations are averaged and become the normal "Low Case" weather condition. A review of twenty-year historical variation of DEF 29-county population growth based on Moody's high and low customer projections out ten years resulted in the final area of variability around the Load Forecast.

This procedure captures the most influential variables around energy sales and peak demand by estimating high and low cases for economics, demographics, and weather conditions. DEF has

evaluated the load projections generated through this process against projected loads based on extreme temperature events over the last 40 years and concluded that the range of load represented in these cases encompasses the probable outcome of such extreme weather recurrence.

## **DEMAND SIDE MANAGEMENT**

Pursuant to the provisions of Florida Statutes Section 366.82 (the “FEECA Statute”), which requires the FPSC to adopt goals for the FEECA utilities to increase energy efficiency and increase the development of demand-side renewable energy systems and directs the FPSC to review those goals every five years, in 2019, the FPSC conducted its statutorily required review and determined that it was in the public interest to continue with the goals for the 2020-2024 time period established in the 2014 Goals setting proceeding and directed the utilities to file Program Plans designed to achieve these goals (Order No. PSC-2019-0509-FOF-EG). In February 2020, DEF submitted a Plan designed to achieve the 2020-2024 goals which was approved by the Commission (Order No. PSC-2020-0274-PAA-EG) in August of that year. The programs included in this Plan are subject to periodic monitoring and evaluation to ensure that all demand-side resources are acquired in a cost-effective manner and that the program savings are durable. Tables 2.1 and 2.2 reflect the annual Program achievements for the residential and commercial sector compared to the Commission established goals for the 2020-2024 time period.

## **RESIDENTIAL DEMAND SIDE MANAGEMENT PROGRAMS**

**TABLE 2.1**  
**Residential DSM MW and GWH Savings**

<b>RESIDENTIAL</b>									
<b>YEAR</b>	<b>WINTER PEAK MW REDUCTION</b>			<b>SUMMER PEAK MW REDUCTION</b>			<b>GWH ENERGY REDUCTION</b>		
	<b>TOTAL</b>	<b>COMMISSION</b>		<b>TOTAL</b>	<b>COMMISSION</b>		<b>TOTAL</b>	<b>COMMISSION</b>	
		<b>APPROVED</b>	<b>%</b>		<b>APPROVED</b>	<b>%</b>		<b>APPROVED</b>	<b>%</b>
<b>ACHIEVED</b>	<b>GOAL</b>	<b>VARIANCE</b>	<b>ACHIEVED</b>	<b>GOAL</b>	<b>VARIANCE</b>	<b>ACHIEVED</b>	<b>GOAL</b>	<b>VARIANCE</b>	
2020	31	32	-5%	18	16	13%	35	9	277%
2021	16	28	-42%	10	14	-26%	25	6	311%
2022	25	25	1%	16	12	30%	49	4	1205%
2023	30	22	36%	19	11	70%	50	2	2244%
2024		21			11			1	

The following provides a list of DEF's Residential DSM programs as of December 31, 2023, along with a brief overview of each program:

**Home Energy Check** – This is DEF's home energy audit program as required by Rule 25-17.003(3)(b), F.A.C. DEF offers a variety of options to customers for home energy audits including walk-through audits, phone assisted audits, and on-line audits. At the completion of the audit, DEF also provides kits that contain energy saving measures that may be easily installed by the customer.

**Residential Incentive Program** – This program provides incentives on a variety of cost-effective measures designed to provide energy savings. DEF expects to provide incentives to customers for the installation of approximately 75,000 energy saving measures over the 2020 to 2024 time period. These measures primarily include heating and cooling, duct repair, insulation, and energy efficient windows and home energy management systems. The measures and incentive levels included in this program have been updated to reflect the impacts of new codes and standards.

**Neighborhood Energy Saver** – This program is designed to provide energy saving education and assistance to low-income customers. This program targets neighborhoods that meet certain income eligibility requirements. DEF plans to install energy saving measures in approximately 5,250 homes annually over the 2020 to 2024 time period. Additionally, DEF increased its targeted homes by 5% or 250 homes above the annual projected homes for the calendar years 2022-2024. These measures will be installed at no cost to the customer and include air infiltration measures, water heating measures, lighting, insulation, duct repair, and heat pump and air conditioning tune-ups.

**Low Income Weatherization Assistance Program** – DEF partners with local agencies to provide funding for energy efficiency and weatherization measures to low-income customers through this program. DEF expects to provide assistance to approximately 500 customers annually through this program.

**Residential Load Management a/k/a EnergyWise** – This is a voluntary residential demand response program that provides monthly bill credits to customers who allow DEF to reduce peak demand by controlling service to selected electric equipment through various devices and communication options installed on the customer’s premises. These interruptions are at DEF’s option, during specified time periods, and coincident with hours of peak demand. Customers must have a minimum average monthly usage of 600 kWh to be eligible to participate in this program.

The Company is actively replacing 3G load control devices at customer premises and it remains on track for that work to be completed in 2025, as noted in the 2023 Ten-Year Site Plan. DEF will file its plan for incremental capability in the DSM goal setting docket this year and reflect the Commission approved increases in the 2025 Ten-Year Site Plan.

**COMMERCIAL/INDUSTRIAL DEMAND SIDE MANAGEMENT PROGRAMS**

**TABLE 2.2**

**Commercial/Industrial DSM MW and GWH Savings**

COMMERCIAL / INDUSTRIAL									
YEAR	WINTER PEAK MW REDUCTION			SUMMER PEAK MW REDUCTION			GWH ENERGY REDUCTION		
	TOTAL	COMMISSION		TOTAL	COMMISSION		TOTAL	COMMISSION	
		ACHIEVED	APPROVED		%	ACHIEVED		GOAL	VARIANCE
2020	24	5	354%	46	8	460%	40	6	582%
2021	11	5	124%	24	7	248%	22	4	454%
2022	5	5	1%	5	6	-17%	3	2	25%
2023	30	5	510%	27	6	377%	10	1	654%
2024		5			5			1	

The following provides a list of DEF’s Commercial DSM programs as of December 31, 2023, along with a brief overview of each program:

**Business Energy Check** – This is a commercial energy audit program that provides commercial customers with an analysis of their energy usage and information about energy-saving practices specific to their business and operations and cost-effective measures that they can implement at their facilities.

**Smart Saver Business f/k/a Better Business** – This program provides incentives to commercial

customers on a variety of cost-effective energy efficiency measures. These measures are primarily comprised of measures that reduce cooling and heating load.

**Smart Saver Custom Incentive f/k/a Florida Custom Incentive** – The objective of this program is to encourage customers to make capital investments for the installation of energy efficiency measures which reduce energy and peak demand. This program provides incentives for customized energy efficiency projects and measures that are cost effective but are not otherwise included in DEF’s prescriptive commercial programs.

**Interruptible Service** – This program is available to commercial customers with a minimum billing demand of 500 KW or more who are willing to have their power interrupted at times of capacity shortage during peak or emergency conditions. DEF has remote control access to the switch providing power to the customer’s equipment. Customers participating in the Interruptible Service program receive a monthly interruptible demand credit based on their bills.

**Curtable Service** - This program is an indirect load control program that reduces DEF’s energy demand at times of capacity shortage during peak or emergency conditions. The program is available to commercial customers with a minimum of 500KW or more who are willing to curtail their load.

**Standby Generation** - This program is a demand control program that reduces DEF’s demand based upon the control of the customer’s back-up generator. The program is a voluntary program available to all commercial and industrial customers who have on-site stand-by generation capacity of at least 50 KW and are willing to allow remote activation of their on-site generation capability in emergencies.

## **OTHER DSM PROGRAMS**

The following provides an overview of other DSM programs:

**Technology Development** – This program is used to fund research, testing and development of



new energy efficiency and demand response technologies. This program provides the opportunity to investigate and test new technologies and determine their usefulness and feasibility in the support of energy efficiency and demand response programs.

**Qualifying Facilities** – This program analyzes, forecasts, facilitates, and administers the potential and actual power purchases from Qualifying Facilities (QFs) and the state jurisdictional QF or distributed generator interconnections. The program supports meetings with interested parties or potential QFs, including cogeneration and small power production facilities including renewables interested in providing renewable capacity or energy deliveries within our service territory. Project, interconnection, and avoided cost discussions with renewable and combined heat and power developers who are also exploring distributed generation options continue to remain steady. Most of the interest is coming from companies utilizing solar photovoltaic technology as the price of photovoltaic panels has decreased over time. The cost of this technology continues to decrease, and subsidies remain in place. As of December 31<sup>st</sup>, 2023, DEF had 69 active solar projects totaling approximately 5,100 MW in its FERC jurisdictional interconnection queue and 19 of those projects included DEF as the project developer. As the technologies advance and the market evolves, the Company’s policies will continue to be refined and remain compliant.

**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, 2023, DEF had a summer total firm capacity resource of 11,750 MW (see Table 3.1). This capacity resource includes fossil steam generators (2,423 MW), combined cycle plants (5,247 MW), combustion turbines (1,972 MW), solar power plants (648 MW), independent power purchases (1,163 MW), and non-utility purchased power (297 MW). Table 3.2 presents DEF's firm capacity contracts with renewable and cogeneration Facilities.

##### ***Demand-Side Programs***

In August 2020, the FPSC approved demand-side management programs designed to meet the DSM goals established by the Commission in Order PSC-2019-0509-FOF-EG. 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 be found in Schedules 7.1 and 7.2, respectively. Demand forecasts shown in these schedules are based on Schedules 3.1.1 and 3.2.1, the base summer and winter forecasts. 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 a net addition of over 4,700 MW of solar PV generation with an expected equivalent summer firm capacity contribution of approximately 880 MW, 90 MW of firm storage added in 2027 and 430 MW of combustion turbine firm capacity added in years 2032 and 2033. The incorporation of the full firm capacity of the Osprey Energy Center takes place at the end of 2025. Between 2022 and 2027, DEF will add close to 400 MW of combined cycle capacity that results from projects focusing on increasing the fuel efficiency of the combined cycle generating units. DEF continues to consider market supply-side resource alternatives to enhance DEF's resource plan.

DEF recognizes that as solar penetration increases, including both DEF and customer owned PV, the relationship between the solar production and the coincident load peak will change. In this plan, DEF has assigned this DEF owned solar PV generation an equivalent summer capacity value equal to 57% of the nameplate capacity of the planned installations from 2021 to 2024. DEF modeling derives an equivalent summer non-coincident, but on-peak-hour capacity value equal to 25% of the facility's nameplate rating for planned PV installations from 2025 to 2027 and 10% for 2028 and beyond. An annual performance degradation factor of 0.5% has been assigned to the PV installations. DEF will continue to evaluate these assignments over time and may revise these values in future Site Plans based on changes in project designs and the data received from actual operation of these facilities once they are installed. In addition, DEF recognizes that higher penetration of PV resources on the system will result in a need for additional balancing of generation intermittency. The declining capacity value for PV installations late in this decade and beyond could be improved substantially if battery technology advances support economic pairing of PV with energy storage, which could also help to address the need for balancing generation intermittency. DEF's strategy of steady and carefully paced additions of PV to the system will allow continued evaluation of these impacts and the need for additional resources in the future to meet these needs.

In their ongoing efforts to regulate greenhouse gas emissions, on June 19, 2019 the Environmental Protection Agency (EPA) issued the Affordable Clean Energy (ACE) Rule to replace the 2015 Clean Power Plan. However, on January 19, 2021, the U.S. Court of Appeals for the District of

Columbia issued its opinion vacating the ACE Rule and remanding the rule to the EPA. On October 29, 2021, the Supreme Court agreed to hear the appeal of the ACE vacatur. The case was heard at the Supreme Court in February 2022, and on June 30, 2022, the Court issued a decision reversing and remanding the January 19, 2021 D.C. Circuit Court decision. Currently, neither the CPP nor the ACE rule are in effect, as the EPA is working on a replacement rule. On May 23, 2023, EPA proposed five separate actions, which include establishing GHG performance standards for fossil fuel fired EGUs and combustion turbines as well as repealing the ACE rule. The EPA proposal aims to implement more protective GHG emission standards, which are potentially applicable to several DEF coal and natural gas combustion turbine units. DEF will continue to monitor the proposed rule, which is expected to be finalized by May 2024, and the potentially applicable requirements to the DEF emission units.

Duke Energy has set a goal at the enterprise level of achieving at least a 50% reduction in CO<sub>2</sub> emissions from a 2005 baseline by 2030 and net-zero emissions by 2050. DEF has incorporated anticipated tax savings from the 2022 IRA into our resource plan optimization and production cost models. These savings have increased the cost effectiveness of clean energy resources, particularly solar and batteries, enabling further cost-effective progress toward achievement of Duke Energy's enterprise level target.

DEF continues to modernize its generation resources with the retirement and projected retirements of several of the older units in the fleet, particularly combustion turbines at Bayboro, DeBary P2 - P6, and Bartow P1 & P3. Continued operations of the peaking units at Bayboro are planned through the year 2026. The DeBary units P2 - P6 and Bartow units P1 & P3 are projected to retire in 2027. There are many factors which may impact these retirements including environmental regulations and permitting, unit age and maintenance requirements, local operational needs, their relatively small capacity size and system requirement needs. In addition to retirements, DEF anticipates the expiration of several contracts with Qualifying Facilities (QFs) and Independent Power Producers (IPPs) over the plan period. Although the Base Expansion Plan projects expiration of all these contracts, DEF continues to consider options for renewing these contracts in a manner that provides system reliability and cost-effective capacity and energy for our customers.

DEF continues to improve the performance of its generation fleet. Starting in mid-2023 and through the end of 2027, DEF will perform upgrades to the combustion turbines associated with several of the fleet combined cycle units. The goal of these upgrades is to reduce the unit heat rates, improve the fleet fuel efficiency, and reduce DEF CO<sub>2</sub> emissions. These upgrades will also result in the addition of close to 400 MWs of combined cycle capacity.

DEF's Base Expansion Plan projects the need for additional capacity with proposed in-service dates during the ten-year period from 2024 through 2033. The planned capacity additions, together with purchases from QFs, Investor-Owned Utilities (IOUs), and IPPs enable the DEF system to 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.

DEF has examined the high and low load scenarios presented in Schedules 3.1 and 3.2. As discussed in Chapter 2, these scenarios were developed to present and test a range of likely outcomes in peak load and energy demand. DEF found that the Base Expansion Plan was robust under the range of conditions examined. Current planned capacity is sufficient to meet the demand including reserve margin in these cases through 2028 allowing DEF sufficient time to plan additional generation capacity either through power purchase or new generation construction as needed if higher than baseline conditions emerge. If lower than baseline conditions emerge, DEF can defer future generation additions.

Status reports and specifications for the planned new generation facilities are included in Schedule 9. Planned transmission lines associated with the 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, 2023**

PLANTS	SUMMER NET DEPENDABLE CAPABILITY (MW)
<b>Fossil Steam</b>	2,423
<b>Combined Cycle</b>	5,247
<b>Combustion Turbine</b>	1,972
<b>Solar</b>	648
<b>Total Net Dependable Generating Capability</b>	<b>10,290</b>
<b>Dependable Purchased Power</b>	1,460
Firm Qualifying Facility Contracts (297 MW)	
Investor Owned Utilities (0 MW)	
Independent Power Producers (1,163 MW)	
<b>TOTAL DEPENDABLE CAPACITY RESOURCES</b>	<b>11,750</b>

<p style="text-align: center;"><b>TABLE 3.2</b></p> <p style="text-align: center;"><b>DUKE ENERGY FLORIDA</b></p> <p style="text-align: center;"><b>FIRM RENEWABLES</b></p> <p style="text-align: center;"><b>AND COGENERATION CONTRACTS</b></p> <p style="text-align: center;"><b>AS OF DECEMBER 31, 2023</b></p>	
<b>Facility Name</b>	<b>Firm Capacity (MW)</b>
Mulberry	115
Orange Cogen (CFR-Biogen)	104
Pasco County Resource Recovery	23
Pinellas County Resource Recovery	54.8
<b>TOTAL</b>	<b>296.8</b>



## 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	FIRM <sup>d</sup>	FIRM		TOTAL	SYSTEM FIRM					
	INSTALLED	CAPACITY	CAPACITY		CAPACITY	SUMMER PEAK	RESERVE MARGIN		SCHEDULED	RESERVE MARGIN	
	CAPACITY	IMPORT	EXPORT	QF <sup>b</sup>	AVAILABLE	DEMAND	BEFORE MAINTENANCE		MAINTENANCE	AFTER MAINTENANCE	
YEAR	MW	MW	MW	MW	MW	MW	MW	% OF PEAK	MW	MW	% OF PEAK
2024	10,418	874	0	78	11,369	9,000	2,369	26%	0	2,369	26%
2025	10,681	759	0	0	11,440	8,836	2,603	29%	0	2,603	29%
2026	11,319	655	0	0	11,974	8,790	3,184	36%	0	3,184	36%
2027	11,038	0	0	0	11,038	8,781	2,257	26%	0	2,257	26%
2028	11,155	0	0	0	11,155	8,908	2,247	25%	0	2,247	25%
2029	11,242	0	0	0	11,242	9,093	2,149	24%	0	2,149	24%
2030	11,336	0	0	0	11,336	9,260	2,076	22%	0	2,076	22%
2031	11,390	0	0	0	11,390	9,374	2,016	22%	0	2,016	22%
2032	11,873	0	0	0	11,873	9,595	2,279	24%	0	2,279	24%
2033	12,356	0	0	0	12,356	9,811	2,545	26%	0	2,545	26%

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 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 <sup>a</sup> CAPACITY	FIRM CAPACITY		TOTAL CAPACITY AVAILABLE	SYSTEM FIRM WINTER PEAK DEMAND	RESERVE MARGIN BEFORE MAINTENANCE	% OF PEAK	SCHEDULED MAINTENANCE	RESERVE MARGIN AFTER MAINTENANCE	% OF PEAK
YEAR	MW	IMPORT MW	EXPORT MW	QF <sup>b</sup> MW	MW	MW	MW		MW	MW	
2023/24	10,675	1,442	0	78	12,195	8,872	3,323	37%	0	3,323	37%
2024/25	10,774	803	0	0	11,577	9,112	2,465	27%	0	2,465	27%
2025/26	11,272	699	0	0	11,971	9,124	2,847	31%	0	2,847	31%
2026/27	11,205	699	0	0	11,904	9,165	2,739	30%	0	2,739	30%
2027/28	10,902	0	0	0	10,902	8,682	2,220	26%	0	2,220	26%
2028/29	10,974	0	0	0	10,974	8,795	2,179	25%	0	2,179	25%
2029/30	11,046	0	0	0	11,046	8,957	2,089	23%	0	2,089	23%
2030/31	11,118	0	0	0	11,118	9,017	2,100	23%	0	2,100	23%
2031/32	11,118	0	0	0	11,118	9,125	1,993	22%	0	1,993	22%
2032/33	11,587	0	0	0	11,587	9,210	2,377	26%	0	2,377	26%

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, 2024 THROUGH DECEMBER 31, 2033

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
													FIRM		
													NET CAPABILITY		
	UNIT	LOCATION	UNIT	FUEL		FUEL TRANSPORT		CONST.	COM'L IN-	EXPECTED	GEN. MAX.				
PLANT NAME	NO.	(COUNTY)	TYPE	PRL	ALT.	PRL	ALT.	MO. / YR	SERVICE	RETIREMENT	NAMEPLATE	SUMMER	WINTER	STATUS <sup>a</sup>	NOTES <sup>b</sup>
MULE CREEK	1	BAY	PV	SO				04/2023	03/2024		74,900	43	0	P	(1)
WINQUEPIN	1	MADISON	PV	SO				04/2023	03/2024		74,900	43	0	P	(1)
FALMOUTH	1	SUWANNEE	PV	SO				06/2023	08/2024		74,900	43	0	P	(1)
COUNTY LINE	1	GILCHRIST	PV	SO				12/2023	10/2024		74,900	43	0		(1)
P L BARTOW	4	PINELLAS	CC	NG	DFO	PL	TK	09/2024	11/2024			141	99	P	(1) and (5)
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(3)			(2)
SUNDANCE	1	MADISON	PV	SO				04/2024	03/2025		74,900	19	0		(1)
HINES	2	POLK	CC	NG	DFO	PL	TK	03/2025	05/2025			65	65	P	(1) and (5)
OSPREY CC	1	POLK	CC	NG	DFO	PL	TK		10/2025			347	381	P	(3)
HINES	4	POLK	CC	NG	DFO	PL	TK	10/2025	11/2025			52	52	P	(1) and (5)
BAILEY MILL	1	JEFFERSON	PV	SO				04/2025	12/2025		74,900	19	0		(1)
HALF MOON	1	SUMTER	PV	SO				04/2025	12/2025		74,900	19	0		(1)
RATTLER	1	HERNANDO	PV	SO				04/2025	12/2025		74,900	19	0		(1)
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(4)			(2)
TIGER BAY	1	POLK	CC	NG	DFO	PL	TK	02/2026	03/2026			22	22	P	(1) and (5)
HINES	3	POLK	CC	NG	DFO	PL	TK	02/2026	04/2026			65	65	P	(1) and (5)
CITRUS	PB1	CITRUS	CC	NG				02/2026	05/2026			22	22	P	(1) and (5)
CITRUS	PB2	CITRUS	CC	NG				02/2026	05/2026			22	22	P	(1) and (5)
UNKNOWN		UNKNOWN	PV	SO				09/2025	06/2026		224,700	56			(1) and (4)
UNKNOWN		UNKNOWN	PV	SO				03/2026	12/2026		149,800	37	0	P	(1) and (4)
BAYBORO	P1 - P4	PINELLAS	CT	DFO		WA				10/2026		(151)	(198)		
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(4)			(2)
UNKNOWN		UNKNOWN	BA	N/A		N/A		01/2026	01/2027		100,000	90	90	P	(1)
DEBARY	P2 - P6	VOLUSIA	CT	DFO		TK				06/2027		(227)	(292)		
BARTOW	P1, P3	PINELLAS	CT	DFO		WA				06/2027		(82)	(101)		
UNKNOWN		UNKNOWN	PV	SO				09/2026	06/2027		224,700	56			(1) and (4)
UNKNOWN		UNKNOWN	PV	SO				04/2027	12/2027		149,800	37	0	P	(1) and (4)
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(5)			(2)

a. See page v. for Code Identification of Future Generating Unit Status.

b. NOTES

- (1) Planned, Prospective, or Committed project.
- (2) Solar capacity degrades by 0.5% every year
- (3) Osprey CC Acquisition total capacity is available once Transmission Upgrades are in service, total Summer capacity goes up to 592MW and total Winter capacity goes up to 626MW
- (4) Multiple 74.9 MWs units at different sites. For SPS, 40 MW of storage for 74.9 MW of Solar PV.
- (5) Combustion Turbines Heat Rate upgrades for Combined Cycles

**DUKE ENERGY FLORIDA**

**SCHEDULE 8**

PLANNED AND PROSPECTIVE GENERATING FACILITY ADDITIONS AND CHANGES

AS OF JANUARY 1, 2024 THROUGH DECEMBER 31, 2033

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)					
													FIRM							
													CONST.	COM/L IN-	EXPECTED	GEN. MAX.	NET CAPABILITY			
													START	SERVICE	RETIREMENT	NAMEPLATE	SUMMER	WINTER	STATUS <sup>a</sup>	NOTES <sup>b</sup>
PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	FUEL PRL	ALT.	FUEL TRANSPORT PRL	ALT.	MO./YR	MO./YR	MO./YR	KW	MW	MW							
UNKNOWN		UNKNOWN	PV	SO				09/2027	07/2028		299,600	30	0	P	(1) and (4)					
UNKNOWN		UNKNOWN	SPS	SO				09/2027	07/2028		149,800	55	72	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(6)			(2)					
UNKNOWN		UNKNOWN	PV	SO				09/2028	07/2029		374,500	37	0	P	(1) and (4)					
UNKNOWN		UNKNOWN	SPS	SO				09/2028	07/2029		149,800	55	72	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(6)			(2)					
UNKNOWN		UNKNOWN	PV	SO				09/2029	07/2030		449,400	45	0	P	(1) and (4)					
UNKNOWN		UNKNOWN	SPS	SO				09/2029	07/2030		149,800	55	72	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(6)			(2)					
UNKNOWN		UNKNOWN	PV	SO				09/2030	07/2031		599,200	60	0	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(6)			(2)					
UNKNOWN	P1 - P2	UNKNOWN	CT	NG	DFO	FL	TK	07/2029	06/2032		455,000	430	466	P	(1)					
UNKNOWN		UNKNOWN	PV	SO				09/2032	07/2033		599,200	60	0	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(7)			(2)					
UNKNOWN	P3 - P4	UNKNOWN	CT	NG	DFO	FL	TK	07/2030	06/2033		455,000	430	466	P	(1)					
UNKNOWN		UNKNOWN	PV	SO				09/2032	07/2033		599,200	60	0	P	(1) and (4)					
SOLAR DEGRADATION	N/A	N/A	N/A	N/A		N/A		N/A	N/A	N/A	N/A	(7)			(2)					

a. See page v. for Code Identification of Future Generating Unit Status.

b. NOTES

- (1) Planned, Prospective, or Committed project.
- (2) Solar capacity degrades by 0.5% every year
- (3) Osprey CC Acquisition total capacity is available once Transmission Upgrades are in service, total Summer capacity goes up to 592MW and total Winter capacity goes up to 626MW
- (4) Multiple 74.9 MWs units at different sites. For SPS, 40 MW of storage for 74.9 MW of Solar PV.
- (5) Combustion Turbines Heat Rate upgrades for Combined Cycles

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **Mule Creek**
- (2) Capacity
- a. Nameplate (MWac): 74.9
  - b. Summer Firm (MWac): 42.7
  - c. Winter Firm (MWac): -
- (3) Technology Type: PHOTOVOLTAIC
- (4) Anticipated Construction Timing
- a. Field construction start date: 4/2023
  - b. Commercial in-service date: 3/2024 (EXPECTED)
- (5) Fuel
- a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
- (6) Air Pollution Control Strategy: N/A
- (7) Cooling Method: N/A
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
- (9) Construction Status: PLANNED
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~28 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
- (13) Projected Unit Financial Data
- a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,221.86
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024) 17.17
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **Winquepin**
- (2) Capacity
- a. Nameplate (MWac): 74.9
  - b. Summer Firm (MWac): 42.7
  - c. Winter Firm (MWac): -
- (3) Technology Type: PHOTOVOLTAIC
- (4) Anticipated Construction Timing
- a. Field construction start date: 4/2023
  - b. Commercial in-service date: 3/2024 (EXPECTED)
- (5) Fuel
- a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
- (6) Air Pollution Control Strategy: N/A
- (7) Cooling Method: N/A
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
- (9) Construction Status: PLANNED
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~28 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
- (13) Projected Unit Financial Data
- a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,221.86
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024) 17.17
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Falmouth</b>	
(2) Capacity		
a. Nameplate (MWac):	74.9	
b. Summer Firm (MWac):	42.7	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	6/2023	
b. Commercial in-service date:	8/2024	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~28 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,221.86
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>County Line</b>	
(2) Capacity		
a. Nameplate (MWac):	74.9	
b. Summer Firm (MWac):	42.7	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	12/2023	
b. Commercial in-service date:	10/2024	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~28 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,221.86
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION



**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Sundance</b>	
(2) Capacity		
a. Nameplate (MWac):	74.9	
b. Summer Firm (MWac):	18.7	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	4/2024	
b. Commercial in-service date:	3/2025	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,415.40
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **Bailey Mill**
- (2) Capacity
- a. Nameplate (MWac): 74.9
  - b. Summer Firm (MWac): 18.7
  - c. Winter Firm (MWac): -
- (3) Technology Type: PHOTOVOLTAIC
- (4) Anticipated Construction Timing
- a. Field construction start date: 4/2025
  - b. Commercial in-service date: 12/2025 (EXPECTED)
- (5) Fuel
- a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
- (6) Air Pollution Control Strategy: N/A
- (7) Cooling Method: N/A
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
- (9) Construction Status: PLANNED
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~27 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
- (13) Projected Unit Financial Data
- a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,415.40
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024) 17.17
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Half Moon</b>	
(2) Capacity		
a. Nameplate (MWac):	74.9	
b. Summer Firm (MWac):	18.7	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	4/2025	
b. Commercial in-service date:	12/2025	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,428.31
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:	NO CALCULATION	

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Rattler</b>	
(2) Capacity		
a. Nameplate (MWac):	74.9	
b. Summer Firm (MWac):	18.7	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	4/2025	
b. Commercial in-service date:	12/2025	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,428.31
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	224.7	
b. Summer Firm (MWac):	56.2	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	9/2025	
b. Commercial in-service date:	6/2026	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,428.34
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:	NO CALCULATION	

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	149.8	
b. Summer Firm (MWac):	37.5	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	4/2026	
b. Commercial in-service date:	12/2026	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,419.08
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	100.0	
b. Summer Firm (MWac):	90.0	
c. Winter Firm (MWac):	90.0	
(3) Technology Type:	BATTERY STORAGE	
(4) Anticipated Construction Timing		
a. Field construction start date:	7/2026	
b. Commercial in-service date:	3/2027	(EXPECTED)
(5) Fuel		
a. Primary fuel:	N/A	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~1 ACRE / 5 MW	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~10 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		15
b. Total Installed Cost (In-service year \$/Kw):		1,650.00
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	30.00
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:	NO CALCULATION	

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **TBD**
- (2) Capacity
- a. Nameplate (MWac): 224.7
  - b. Summer Firm (MWac): 56.2
  - c. Winter Firm (MWac): -
- (3) Technology Type: PHOTOVOLTAIC
- (4) Anticipated Construction Timing
- a. Field construction start date: 9/2026
  - b. Commercial in-service date: 6/2027 (EXPECTED)
- (5) Fuel
- a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
- (6) Air Pollution Control Strategy: N/A
- (7) Cooling Method: N/A
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
- (9) Construction Status: PLANNED
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~27 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
- (13) Projected Unit Financial Data
- a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,409.96
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024) 17.17
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION



**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	149.8	
b. Summer Firm (MWac):	37.5	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	4/2027	
b. Commercial in-service date:	12/2027	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,409.96
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	17.17
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **TBD**
  
- (2) Capacity
  - a. Nameplate (MWac): 299.6
  - b. Summer Firm (MWac): 30.0
  - c. Winter Firm (MWac): -
  
- (3) Technology Type: PHOTOVOLTAIC
  
- (4) Anticipated Construction Timing
  - a. Field construction start date: 9/2027
  - b. Commercial in-service date: 7/2028 (EXPECTED)
  
- (5) Fuel
  - a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
  
- (6) Air Pollution Control Strategy: N/A
  
- (7) Cooling Method: N/A
  
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
  
- (9) Construction Status: PLANNED
  
- (10) Certification Status:
  
- (11) Status with Federal Agencies:
  
- (12) Projected Unit Performance Data
  - a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~27 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
  
- (13) Projected Unit Financial Data
  - a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,648.99
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024)
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

## DUKE ENERGY FLORIDA

### SCHEDULE 9

#### STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES AS OF JANUARY 1, 2024

- (1) Plant Name and Unit Number: **TBD**
- (2) Capacity
- |                        |       |  |
|------------------------|-------|--|
| a. Nameplate (MWac):   | 149.8 |  |
| b. Summer Firm (MWac): | 55.0  |  |
| c. Winter Firm (MWac): | 72.0  |  |
- (3) Technology Type: **PHOTOVOLTAIC WITH BATTERY STORAGE**
- (4) Anticipated Construction Timing
- |                                   |        |            |
|-----------------------------------|--------|------------|
| a. Field construction start date: | 9/2027 |            |
| b. Commercial in-service date:    | 7/2028 | (EXPECTED) |
- (5) Fuel
- |                    |       |  |
|--------------------|-------|--|
| a. Primary fuel:   | SOLAR |  |
| b. Alternate fuel: | N/A   |  |
- (6) Air Pollution Control Strategy: **N/A**
- (7) Cooling Method: **N/A**
- (8) Total Site Area: **~500-600 ACRES  
PER SOLAR SITE (74.9 MW)**
- (9) Construction Status: **PLANNED**
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- |   |  |             |
|---|--|-------------|
| a. Planned Outage Factor (POF):             |  | N/A %       |
| b. Forced Outage Factor (FOF):              |  | N/A %       |
| c. Equivalent Availability Factor (EAF):    |  | N/A %       |
| d. Resulting Capacity Factor (%):           |  | ~34 %       |
| e. Average Net Operating Heat Rate (ANOHR): |  | N/A BTU/Kwh |
- (13) Projected Unit Financial Data
- |  |          |                |
|--|----------|----------------|
| a. Book Life (Years):                            |          | 30             |
| b. Total Installed Cost (In-service year \$/Kw): |          | 2,470.83       |
| c. Direct Construction Cost (\$/Kw ac):          | (\$2024) |                |
| d. AFUDC Amount (\$/Kw):                         |          |                |
| e. Escalation (\$/Kw):                           |          |                |
| f. Fixed O&M (\$/Kw dc-yr):                      | (\$2024) |                |
| g. Variable O&M (\$/MWh):                        | (\$2024) | 0.00           |
| h. K Factor:                                     |          | NO CALCULATION |

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **TBD**
  
- (2) Capacity
  - a. Nameplate (MWac): 374.5
  - b. Summer Firm (MWac): 37.5
  - c. Winter Firm (MWac): -
  
- (3) Technology Type: PHOTOVOLTAIC
  
- (4) Anticipated Construction Timing
  - a. Field construction start date: 9/2028
  - b. Commercial in-service date: 7/2029 (EXPECTED)
  
- (5) Fuel
  - a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
  
- (6) Air Pollution Control Strategy: N/A
  
- (7) Cooling Method: N/A
  
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
  
- (9) Construction Status: PLANNED
  
- (10) Certification Status:
  
- (11) Status with Federal Agencies:
  
- (12) Projected Unit Performance Data
  - a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~27 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
  
- (13) Projected Unit Financial Data
  - a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,632.89
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024)
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- (1) Plant Name and Unit Number: **TBD**
- (2) Capacity
- a. Nameplate (MWac): 149.8
  - b. Summer Firm (MWac): 55.0
  - c. Winter Firm (MWac): 72.0
- (3) Technology Type: PHOTOVOLTAIC WITH BATTERY STORAGE
- (4) Anticipated Construction Timing
- a. Field construction start date: 9/2028
  - b. Commercial in-service date: 7/2029 (EXPECTED)
- (5) Fuel
- a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
- (6) Air Pollution Control Strategy: N/A
- (7) Cooling Method: N/A
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
- (9) Construction Status: PLANNED
- (10) Certification Status:
- (11) Status with Federal Agencies:
- (12) Projected Unit Performance Data
- a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~34 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
- (13) Projected Unit Financial Data
- a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 2,444.11
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024)
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	449.4	
b. Summer Firm (MWac):	44.9	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	9/2029	
b. Commercial in-service date:	7/2030	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,617.30
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

- |  |  |             |
|--|--|-------------|
| (1) Plant Name and Unit Number:                  | <b>TBD</b>                                 |             |
| (2) Capacity                                     |  |             |
| a. Nameplate (MWac):                             | 149.8                                      |             |
| b. Summer Firm (MWac):                           | 55.0                                       |             |
| c. Winter Firm (MWac):                           | 72.0                                       |             |
| (3) Technology Type:                             | PHOTOVOLTAIC WITH BATTERY STORAGE          |             |
| (4) Anticipated Construction Timing              |  |             |
| a. Field construction start date:                | 9/2029                                     |             |
| b. Commercial in-service date:                   | 7/2030                                     | (EXPECTED)  |
| (5) Fuel   |  |             |
| a. Primary fuel:                                 | SOLAR                                      |             |
| b. Alternate fuel:                               | N/A  |             |
| (6) Air Pollution Control Strategy:              | N/A  |             |
| (7) Cooling Method:                              | N/A  |             |
| (8) Total Site Area:                             | ~500-600 ACRES<br>PER SOLAR SITE (74.9 MW) |             |
| (9) Construction Status:                         | PLANNED                                    |             |
| (10) Certification Status:                       |  |             |
| (11) Status with Federal Agencies:               |  |             |
| (12) Projected Unit Performance Data             |  |             |
| a. Planned Outage Factor (POF):                  |  | N/A %       |
| b. Forced Outage Factor (FOF):                   |  | N/A %       |
| c. Equivalent Availability Factor (EAF):         |  | N/A %       |
| d. Resulting Capacity Factor (%):                |  | ~34 %       |
| e. Average Net Operating Heat Rate (ANOHR):      |  | N/A BTU/Kwh |
| (13) Projected Unit Financial Data               |  |             |
| a. Book Life (Years):                            |  | 30          |
| b. Total Installed Cost (In-service year \$/Kw): |  | 2,418.04    |
| c. Direct Construction Cost (\$/Kw ac):          | (\$2024)                                   |             |
| d. AFUDC Amount (\$/Kw):                         |  |             |
| e. Escalation (\$/Kw):                           |  |             |
| f. Fixed O&M (\$/Kw dc-yr):                      | (\$2024)                                   |             |
| g. Variable O&M (\$/MWh):                        | (\$2024)                                   | 0.00        |
| h. K Factor:                                     | NO CALCULATION                             |             |

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024**

- |  |  |                |
|--|--|----------------|
| (1) Plant Name and Unit Number:                  | <b>TBD</b>                                 |                |
| (2) Capacity                                     |  |                |
| a. Nameplate (MWac):                             | 599.2                                      |                |
| b. Summer Firm (MWac):                           | 59.9                                       |                |
| c. Winter Firm (MWac):                           | -  |                |
| (3) Technology Type:                             | PHOTOVOLTAIC                               |                |
| (4) Anticipated Construction Timing              |  |                |
| a. Field construction start date:                | 9/2030                                     |                |
| b. Commercial in-service date:                   | 7/2031                                     | (EXPECTED)     |
| (5) Fuel   |  |                |
| a. Primary fuel:                                 | SOLAR                                      |                |
| b. Alternate fuel:                               | N/A  |                |
| (6) Air Pollution Control Strategy:              | N/A  |                |
| (7) Cooling Method:                              | N/A  |                |
| (8) Total Site Area:                             | ~500-600 ACRES<br>PER SOLAR SITE (74.9 MW) |                |
| (9) Construction Status:                         | PLANNED                                    |                |
| (10) Certification Status:                       |  |                |
| (11) Status with Federal Agencies:               |  |                |
| (12) Projected Unit Performance Data             |  |                |
| a. Planned Outage Factor (POF):                  |  | N/A %          |
| b. Forced Outage Factor (FOF):                   |  | N/A %          |
| c. Equivalent Availability Factor (EAF):         |  | N/A %          |
| d. Resulting Capacity Factor (%):                |  | ~27 %          |
| e. Average Net Operating Heat Rate (ANOHR):      |  | N/A BTU/Kwh    |
| (13) Projected Unit Financial Data               |  |                |
| a. Book Life (Years):                            |  | 30             |
| b. Total Installed Cost (In-service year \$/Kw): |  | 1,602.23       |
| c. Direct Construction Cost (\$/Kw ac):          | (\$2024)                                   |                |
| d. AFUDC Amount (\$/Kw):                         |  |                |
| e. Escalation (\$/Kw):                           |  |                |
| f. Fixed O&M (\$/Kw dc-yr):                      | (\$2024)                                   |                |
| g. Variable O&M (\$/MWh):                        | (\$2024)                                   | 0.00           |
| h. K Factor:                                     |  | NO CALCULATION |



**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Undesignated CTs P1-P2</b>	
(2) Capacity		
a. Summer (MWs):	215	
b. Winter (MWs):	235	
(3) Technology Type:	COMBUSTION TURBINE	
(4) Anticipated Construction Timing		
a. Field construction start date:	7/2029	
b. Commercial in-service date:	6/2032	(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	
(9) Construction Status:	PLANNED	
(10) Certification Status:	PLANNED	
(11) Status with Federal Agencies:	PLANNED	
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		3.00 %
b. Forced Outage Factor (FOF):		2.00 %
c. Equivalent Availability Factor (EAF):		95.06
d. Resulting Capacity Factor (%):		1.9 %
e. Average Net Operating Heat Rate (ANOHR):		10,487 BTU/kWh
(13) Projected Unit Financial Data		
a. Book Life (Years):		35
b. Total Installed Cost (In-service year \$/kW):		1,421.8
c. Direct Construction Cost (\$/kW):	(\$2024)	1,239.7
d. AFUDC Amount (\$/kW):		180.9
e. Escalation (\$/kW):		1.2
f. Fixed O&M (\$/kW-yr):	(\$2024)	2.86
g. Variable O&M (\$/MWh):	(\$2024)	9.03
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, 2024**

- (1) Plant Name and Unit Number: **TBD**
  
- (2) Capacity
  - a. Nameplate (MWac): 599.2
  - b. Summer Firm (MWac): 59.9
  - c. Winter Firm (MWac): -
  
- (3) Technology Type: PHOTOVOLTAIC
  
- (4) Anticipated Construction Timing
  - a. Field construction start date: 9/2031
  - b. Commercial in-service date: 7/2032 (EXPECTED)
  
- (5) Fuel
  - a. Primary fuel: SOLAR
  - b. Alternate fuel: N/A
  
- (6) Air Pollution Control Strategy: N/A
  
- (7) Cooling Method: N/A
  
- (8) Total Site Area: ~500-600 ACRES  
PER SOLAR SITE (74.9 MW)
  
- (9) Construction Status: PLANNED
  
- (10) Certification Status:
  
- (11) Status with Federal Agencies:
  
- (12) Projected Unit Performance Data
  - a. Planned Outage Factor (POF): N/A %
  - b. Forced Outage Factor (FOF): N/A %
  - c. Equivalent Availability Factor (EAF): N/A %
  - d. Resulting Capacity Factor (%): ~27 %
  - e. Average Net Operating Heat Rate (ANOHR): N/A BTU/Kwh
  
- (13) Projected Unit Financial Data
  - a. Book Life (Years): 30
  - b. Total Installed Cost (In-service year \$/Kw): 1,587.67
  - c. Direct Construction Cost (\$/Kw ac): (\$2024)
  - d. AFUDC Amount (\$/Kw):
  - e. Escalation (\$/Kw):
  - f. Fixed O&M (\$/Kw dc-yr): (\$2024)
  - g. Variable O&M (\$/MWh): (\$2024) 0.00
  - h. K Factor: NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 9**

STATUS REPORT AND SPECIFICATIONS OF PROPOSED GENERATING FACILITIES  
AS OF JANUARY 1, 2024

(1) Plant Name and Unit Number:	<b>Undesignated CTs P3-P4</b>	
(2) Capacity		
a. Summer (MWs):	215	
b. Winter (MWs):	235	
(3) Technology Type:	COMBUSTION TURBINE	
(4) Anticipated Construction Timing		
a. Field construction start date:	7/2030	
b. Commercial in-service date:	6/2033	(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	
(9) Construction Status:	PLANNED	
(10) Certification Status:	PLANNED	
(11) Status with Federal Agencies:	PLANNED	
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):	3.00	%
b. Forced Outage Factor (FOF):	2.00	%
c. Equivalent Availability Factor (EAF):	95.06	
d. Resulting Capacity Factor (%):	1.9	%
e. Average Net Operating Heat Rate (ANOHR):	10,487	BTU/kWh
(13) Projected Unit Financial Data		
a. Book Life (Years):	35	
b. Total Installed Cost (In-service year \$/kW):	1,428.6	
c. Direct Construction Cost (\$/kW):	1,245.5	(\$2024)
d. AFUDC Amount (\$/kW):	181.7	
e. Escalation (\$/kW):	1.4	
f. Fixed O&M (\$/kW-yr):	2.86	(\$2024)
g. Variable O&M (\$/MWh):	9.03	(\$2024)
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, 2024

(1) Plant Name and Unit Number:	<b>TBD</b>	
(2) Capacity		
a. Nameplate (MWac):	599.2	
b. Summer Firm (MWac):	59.9	
c. Winter Firm (MWac):	-	
(3) Technology Type:	PHOTOVOLTAIC	
(4) Anticipated Construction Timing		
a. Field construction start date:	9/2032	
b. Commercial in-service date:	7/2033	(EXPECTED)
(5) Fuel		
a. Primary fuel:	SOLAR	
b. Alternate fuel:	N/A	
(6) Air Pollution Control Strategy:	N/A	
(7) Cooling Method:	N/A	
(8) Total Site Area:	~500-600 ACRES PER SOLAR SITE (74.9 MW)	
(9) Construction Status:	PLANNED	
(10) Certification Status:		
(11) Status with Federal Agencies:		
(12) Projected Unit Performance Data		
a. Planned Outage Factor (POF):		N/A %
b. Forced Outage Factor (FOF):		N/A %
c. Equivalent Availability Factor (EAF):		N/A %
d. Resulting Capacity Factor (%):		~27 %
e. Average Net Operating Heat Rate (ANOHR):		N/A BTU/Kwh
(13) Projected Unit Financial Data		
a. Book Life (Years):		30
b. Total Installed Cost (In-service year \$/Kw):		1,518.91
c. Direct Construction Cost (\$/Kw ac):	(\$2024)	
d. AFUDC Amount (\$/Kw):		
e. Escalation (\$/Kw):		
f. Fixed O&M (\$/Kw dc-yr):	(\$2024)	
g. Variable O&M (\$/MWh):	(\$2024)	0.00
h. K Factor:		NO CALCULATION

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**MULE CREEK SOLAR**

- |   |   |
|---|---|
| (1) POINT OF ORIGIN AND TERMINATION:    | Ladybug Substation                      |
| (2) NUMBER OF LINES:                    | 1                                       |
| (3) RIGHT-OF-WAY:                       | Existing transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.1 miles                               |
| (5) VOLTAGE:                            | 230 kV                                  |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 1/1/2024                                |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$5,536,000                             |
| (8) SUBSTATIONS:                        | Ladybug Substation                      |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                     |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**WINQUEPIN SOLAR**

- |   |                                    |
|---|------------------------------------|
| (1) POINT OF ORIGIN AND TERMINATION:    | Birch Switching Station            |
| (2) NUMBER OF LINES:                    | 1                                  |
| (3) RIGHT-OF-WAY:                       | New transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.1 miles                          |
| (5) VOLTAGE:                            | 230 kV                             |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 4/26/2024                          |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$16,018,213                       |
| (8) SUBSTATIONS:                        | Birch Switching Station            |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**FALMOUTH SOLAR**

- |   |                                    |
|---|------------------------------------|
| (1) POINT OF ORIGIN AND TERMINATION:    | Suwannee Substation                |
| (2) NUMBER OF LINES:                    | 1                                  |
| (3) RIGHT-OF-WAY:                       | New transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.2 miles                          |
| (5) VOLTAGE:                            | 115 kV                             |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 4/26/2024                          |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$5,190,000                        |
| (8) SUBSTATIONS:                        | Suwannee Substation                |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**COUNTY LINE SOLAR**

- |   |   |
|---|---|
| (1) POINT OF ORIGIN AND TERMINATION:    | Ginnie Substation                       |
| (2) NUMBER OF LINES:                    | 1                                       |
| (3) RIGHT-OF-WAY:                       | Existing transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.1 miles                               |
| (5) VOLTAGE:                            | 230 kV                                  |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 12/31/2024                              |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$3,532,625                             |
| (8) SUBSTATIONS:                        | Ginnie Substation                       |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                     |



**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**SUNDANCE SOLAR**

- |   |                                    |
|---|------------------------------------|
| (1) POINT OF ORIGIN AND TERMINATION:    | Birch Switching Station            |
| (2) NUMBER OF LINES:                    | 1                                  |
| (3) RIGHT-OF-WAY:                       | New transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.5 miles                          |
| (5) VOLTAGE:                            | 230 kV                             |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 3/1/2025                           |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$5,540,000                        |
| (8) SUBSTATIONS:                        | Birch Switching Station            |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**BAILEY MILL SOLAR**

- |   |                                    |
|---|------------------------------------|
| (1) POINT OF ORIGIN AND TERMINATION:    | Waukeelah Substation               |
| (2) NUMBER OF LINES:                    | 1                                  |
| (3) RIGHT-OF-WAY:                       | New transmission line right-of-way |
| (4) LINE LENGTH:                        | 0.1 miles                          |
| (5) VOLTAGE:                            | 115 kV                             |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 7/3/2026                           |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$11,060,000                       |
| (8) SUBSTATIONS:                        | Waukeelah Substation               |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A                                |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**HALF MOON SOLAR**

- |   |  |
|---|--|
| (1) POINT OF ORIGIN AND TERMINATION:    | A new 230 kV Switching Station on the Central Florida to Holder 230 kV line, approximately 18 miles from Holder substation |
| (2) NUMBER OF LINES:                    | 1  |
| (3) RIGHT-OF-WAY:                       | Existing transmission line right-of-way  |
| (4) LINE LENGTH:                        | 0.1 miles  |
| (5) VOLTAGE:                            | 230 kV   |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 12/1/2025  |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$28,167,740   |
| (8) SUBSTATIONS:                        | A new 230 kV Switching Station on the Central Florida to Holder 230 kV line, approximately 18 miles from Holder substation |
| (9) PARTICIPATION WITH OTHER UTILITIES: | N/A  |

**DUKE ENERGY FLORIDA**

**SCHEDULE 10**

**STATUS REPORT AND SPECIFICATIONS OF PROPOSED DIRECTLY ASSOCIATED TRANSMISSION LINES**

**RATTLER SOLAR**

- |   |   |
|---|---|
| (1) POINT OF ORIGIN AND TERMINATION:    | A greenfield four (4) position ring bus substation along the DEF Brooksville to Inverness 69 kV transmission line, proximate to the existing Nobleton Tap |
| (2) NUMBER OF LINES:                    | 1   |
| (3) RIGHT-OF-WAY:                       | New transmission line right-of-way  |
| (4) LINE LENGTH:                        | 1 mile  |
| (5) VOLTAGE:                            | 69 kV   |
| (6) ANTICIPATED CONSTRUCTION TIMING:    | 11/1/2025   |
| (7) ANTICIPATED CAPITAL INVESTMENT:     | \$22,337,000  |
| (8) SUBSTATIONS:                        | A greenfield four (4) position ring bus substation along the DEF Brooksville to Inverness 69 kV transmission line, proximate to the existing Nobleton Tap |
| (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: Kathleen - Osprey
- (2) NUMBER OF LINES: 1
- (3) RIGHT-OF-WAY: New transmission line right-of-way
- (4) LINE LENGTH: 26.5 miles
- (5) VOLTAGE: 230 kV
- (6) ANTICIPATED CONSTRUCTION TIMING: 11/1/2024
- (7) ANTICIPATED CAPITAL INVESTMENT: \$150,000,000
- (8) SUBSTATIONS: Kathleen, Osprey
- (9) PARTICIPATION WITH OTHER UTILITIES: N/A

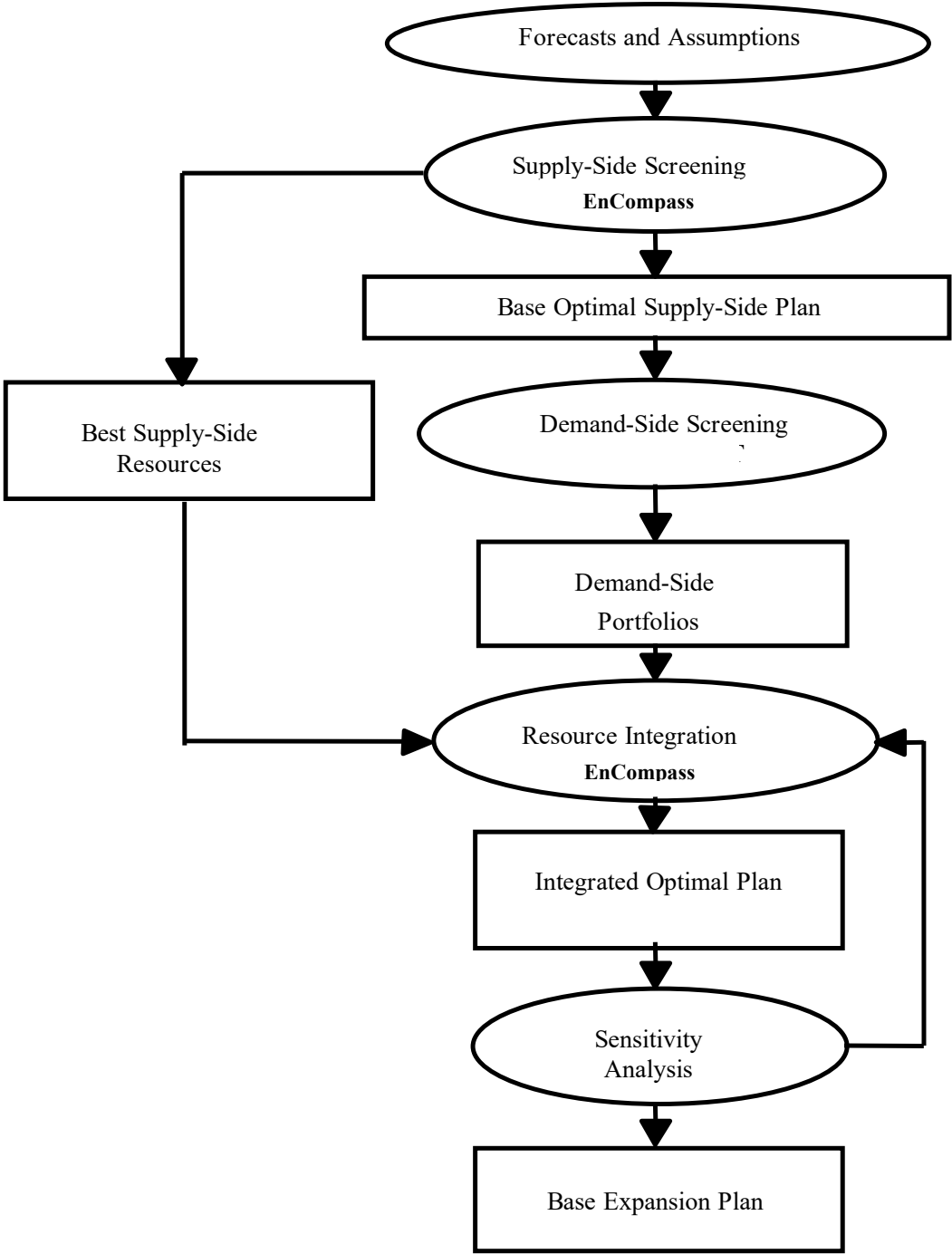
## **INTEGRATED RESOURCE PLANNING OVERVIEW**

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 that meets the reliability criteria for our customers. 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 minimum 20% 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 considers 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% 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% 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., emissions, possible climate impact), and overall resource feasibility.

Economic evaluation of generation alternatives is performed using the Capacity Expansion module of the EnCompass Power Planning Software licensed from Anchor Power Solutions. 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. Capacity expansion models are used to identify cost-effective system resources. However, additional modeling in a detailed production cost model is necessary to verify the resource selections with respect to cost, reliability, and environmental compliance as well as to conduct an overall assessment of the performance of the portfolio.

### ***Demand-Side Screening***

Like supply-side resources, the impacts of potential demand-side resources are also factored into the integrated resource plan. The projected MW and MWH impacts for demand-side management

resources are based on the energy efficiency measures and energy management programs included in DEF's 2015 DSM Plan and meet the goals established by the FPSC in December 2019 (Docket 20190018-EG).

### ***Resource Integration and the Integrated Optimal Plan***

The cost-effective generation alternatives can then be optimized together with the demand-side portfolios developed in the screening process 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 customers. Candidate base plans are then evaluated using the production cost module of EnCompass. Production cost models maintain full chronology and load requirements in all hours simulating the hour-to-hour operation of the system. This provides hourly modeling of the portfolio dispatch and provides insights into the detailed energy production cost of a given portfolio, the emissions profile and helps to identify potential issues with unit operation and reliability.

### ***Developing the Base Expansion Plan***

The integrated optimized plan that provides the lowest revenue requirements may then be further tested using sensitivity analysis, including High and Low Demand and Energy Forecasts (see Schedules 2 and 3). 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. The High and Low forecasts of load and energy were provided to Resource Planning to test the robustness of the base plan.

### ***Fuel Price 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% debt and 53% equity capital structure, projected cost of debt of 6.0%, and an equity return of 10.1%. The assumptions resulted in a weighted average cost of capital of 8.17% and an after-tax discount rate of 7.45%.

## **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 a net addition of over 4,700 MW of solar PV generation with an expected equivalent summer firm capacity contribution of approximately 880 MW, 90 MW of firm storage added in 2027 and 430 MW of combustion turbine firm capacity added in years 2032 and 2033. The incorporation of the full firm capacity of the Osprey Energy Center takes place at the end of 2025. Between 2022 and 2027, DEF will add close to 400 MW of combined cycle capacity that results from projects focusing on increasing the fuel efficiency of the combined cycle generating units. DEF continues to consider market supply-side resource alternatives to enhance DEF's resource plan.

The incorporation of the IRA tax credits has helped offset projected cost increases for solar, batteries, and solar plus storage units. In DEF's most recent approved rate settlement (FPSC Docket No. 20210016-EI), DEF anticipates the retirement of the two remaining coal units at Crystal River (Crystal River units 4 and 5) in 2034. Solar PV and a mix of batteries and CTs will

be the cost-effective generation to replace most of that energy in the 2034 timeframe. DEF's plan to construct Solar Plants continues following a steady path, including a total of 1350 MW in the years 2024 through 2027. From 2028 through 2030 two Solar plus Storage units will be added per year. A more aggressive addition of Solar resources will continue from 2028 through 2033, totaling an additional 2,925 MW over those 6 years. This provides a path to meeting this goal through a measured and paced approach to bringing the solar onto the system which recognizes the challenges of building and interconnecting solar projects, helps maintain reliability as solar penetration increases and maintains affordability in customer rates. As with other elements of the plan, DEF will update these projections as decision dates approach. DEF also continues to consider market supply-side resource alternatives to enhance DEF's resource plan.

DEF recognizes that, as solar penetration increases, including both DEF and customer-owned PV, the total dependable solar resource capability is influencing or shifting DEF's reserve planning focus later beyond the on-peak period. DEF is accounting for this planning shift by deriving reduced summer capacity values of planned PV installations starting in 2025. Refer to Page 3-2 for additional solar resource capacity values that are accounting for this change.

DEF's Base Expansion Plan projects the need for additional capacity with estimated in-service dates during the ten-year period from 2024 through 2033. The planned capacity additions, together with purchases from QFs, IOUs, and IPPs 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 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 secure renewable energy from the following facilities listed by fuel type:

### ***Purchases from 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)  
Lee County Resource Recovery (As Available)

### ***Purchases from Waste Heat from Exothermic Processes:***

PCS Phosphate (As Available)  
Citrus World (As Available)

### ***Solar Photovoltaic Facilities***

DEF-owned Solar Generation (1185.75 MW)  
Osceola Solar Facility 3.8 MW  
Perry Solar Facility 5.1 MW  
Suwannee Solar Facility 8.8 MW  
Hamilton Solar Power Plant 74.9 MW  
Trenton Solar Power Plant 74.9 MW  
Lake Placid Solar Power Plant 45.0 MW  
St. Petersburg Pier Solar Power Plant 0.35 MW  
DeBary Solar Power Plant 74.5 MW  
Columbia Solar Power Plant 74.9 MW

Twin Rivers Solar Power Plant 74.9 MW  
Santa Fe Solar Power Plant 74.9 MW  
Duette Solar Power Plant 74.5 MW  
Sandy Creek Solar Power Plant 74.9 MW  
Fort Green Solar Power Plant 74.9 MW  
Charlie Creek Solar Power Plant 74.9 MW  
Bay Trail Solar Power Plant 74.9 MW  
Bay Ranch Solar Power Plant 74.9 MW  
Hardeetown Solar Power Plant 74.9 MW  
High Springs Solar Power Plant 74.9 MW  
Hildreth Solar Power Plant 74.9 MW

Customer-owned renewable generation under DEF's Net Metering Tariff (about 775 MW as of 12/31/23)

At this time, DEF is reviewing the potential for as-available purchased power contracts with third-party solar companies. In-service dates, however, are generally projected to be beyond 2025. As of December 31, 2023, DEF had over 5,100 MW of FERC jurisdictional solar projects in the DEF grid interconnection queue, representing over 69 active projects and 19 of those projects included DEF as the noted developer. DEF anticipates that additional projects developed by DEF as well as third parties will be added through the decade. Project ownership proportions may change over time based on specific project economics, development details, renewable energy incentives and other factors.

DEF continues to field inquiries from potential renewable suppliers and explore whether these potential QFs can provide project commitments and reliable capacity or energy consistent with FERC Rules and the FPSC Rules, 25-17.080 through 25-17.310. DEF will continue to submit renewable contracts in compliance with all policies as appropriate.

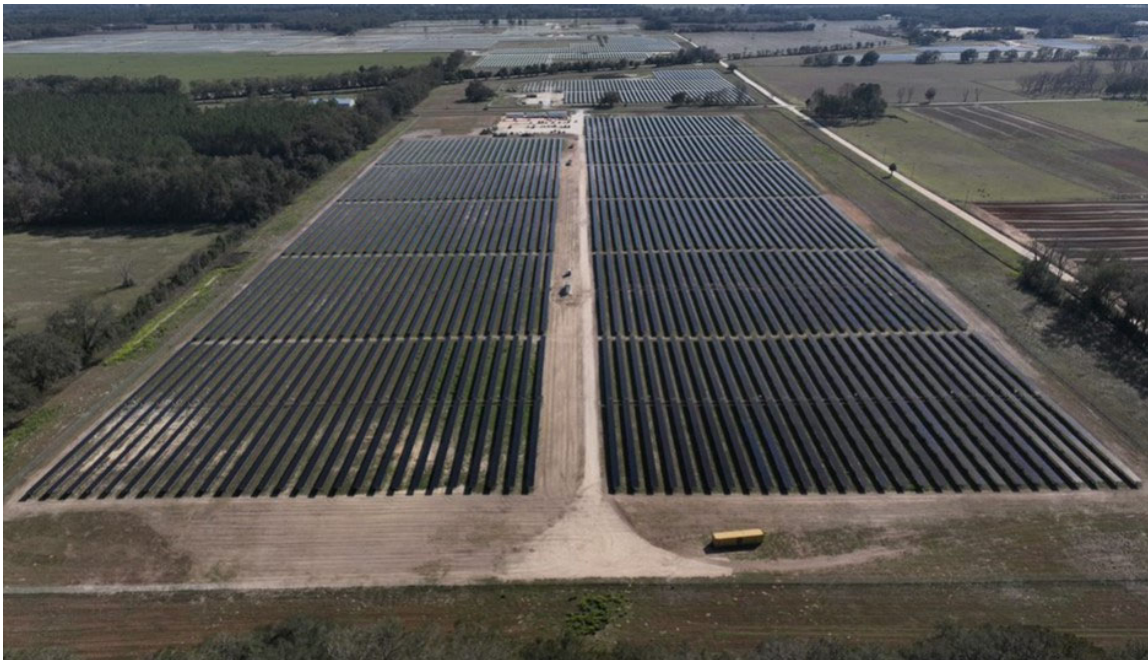
The development, construction, commissioning and initial operation of the solar projects at Perry, Osceola, Suwannee, Hamilton, Lake Placid, Trenton, DeBary, Columbia, Twin Rivers, Santa Fe, Duette, Bay Trail, Sandy Creek, Fort Green, Charlie Creek, the now commercial Bay Ranch, Hildreth, Hardeetown, and High Springs plants and under construction Mule Creek, Winquepin, Falmouth and County Line have provided DEF with valuable experience in siting, community engagement, contracting, constructing, operating, and integrating solar photovoltaic technology facilities on the power grid. DEF has worked with our communities on renewable and solar energy technology education, and our contractors to establish necessary standards for the construction and upkeep of utility grade facilities and to develop standards necessary to ensure the reliability of local distribution systems.

DEF is integrating voltage control in the transmission connected solar projects to enhance operational reliability and local transmission resiliency. In addition, DEF is incorporating the ability to place the solar facilities on Automatic Generation Control (AGC). This capability is preparing DEF for future scenarios where there is an excess of generation on the system and a need to utilize the solar resources to balance generation with demand. DEF is utilizing its operational experience and historic data from these solar resources to optimize the daily economic system dispatch, to quantify additional system flexibility needs to counteract the variability of solar generation and investigate potential fuel diversity contributions. The arrays for the solar plants that went in-service in 2023, Bay Ranch, Hardeetown, High Springs, and Hildreth, are shown in Figures 3.2, 3.3, 3.4, and 3.5 below.

**FIGURE 3.2**  
**Bay Ranch Solar Power Plant**



**FIGURE 3.3**  
**Hardeetown Solar Power Plant**





**FIGURE 3.4**  
**High Springs Solar Power Plant**



**FIGURE 3.5**  
**Hildreth Power Plant**



DEF’s current forecast, supporting the Base Expansion Plan includes over 1,340 MW of DEF-owned solar PV to be under development over the next four years and approximately 4,700 MW over the ten-year planning horizon. As with all forecasts included here, the forecast relies heavily on the forward-looking price for this technology, the value rendered by this technology, and considerations to other emerging and conventional cost-effective alternatives, including the use of emerging battery storage technology.

**BATTERY ENERGY STORAGE SYSTEMS**

The final energy storage systems from DEF’s 50 MW battery storage pilot program (Battery Storage Pilot) were placed in-service in 2023. This portfolio of projects may serve a variety of purposes including, but not limited to substation upgrade deferral, distribution line reconducting deferral, power reliability improvement, frequency regulation, Volt/VAR support, backup power, energy capture, and peak load shaving. The projects, max power output, and guaranteed energy storage for a minimum of ten years are provided in Table 3.3. Going forward, DEF will use the data gathered from the operation of these Pilot Program sites to evaluate the opportunities and uses of future DEF battery development. Integration and information sharing with the Duke Energy enterprise Emerging Technology Office will also allow real-world comparison with alternative technologies that may be available for commercial use in coming years.

**Table 3.3**  
**DEF Battery Energy Storage Pilot Program Projects Summary**

<b>Name</b>	<b>Max Power Output (MW)</b>	<b>Guaranteed Energy Storage (MWh)</b>
Cape San Blas	5.5	14.3
Trenton	11.0	10.1
Micanopy	8.25	11.7
Jennings	5.5	5.5
John Hopkins Middle School	2.475	18.0
Lake Placid	17.275	34.0

DEF is currently developing a 100 MW / 200 MWH Battery Energy Storage System with a planned in-service date in 2027. The project will utilize lithium-ion energy storage and be located to maximize the Standalone Storage Investment Tax Credit (ITC) passed into law by the current administration. The expected increase of solar energy generation on the system provides a unique opportunity for energy storage assets to assist system integration of these intermittent resources and shift energy from lower system value periods to times with higher system value. This energy arbitrage will allow the cost of energy to be more predictably levelized and potentially partially reduces the need for peaking generation. New technologies and changing economics may allow acceleration of energy storage deployment in the future.

## **TECHNOLOGY AND INNOVATION**

Duke Energy continues to evaluate new technology and innovations for potential application both in and beyond the ten-year plan window. Technologies under evaluation, but not yet included in the base expansion plan may be commercially or economically unproven, but Duke Energy and DEF are active in investigation and development of these technologies. At the Duke Energy enterprise level, engineers and specialists are involved in cooperative work with vendors and industry groups on supply-side technologies including wind generation, advanced battery development, hydrogen generation and combustion, and advanced nuclear. On the demand side, technologies including advanced demand response technologies such as commercial building pre-cooling, two-way water heater control, and smart appliance applications are being explored and evaluated. In addition, the company continues to explore intersections of grid and system operations with alternative generating technologies including distributed solar and storage and microgrid applications.

## **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. A

specific discussion of DEF's review of load growth forecasts higher and lower than the base forecast can be found in the previous sections.

### **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 No. 715 filing, and to assure the system meets DEF, Florida Reliability Coordinating Council, Inc. (FRCC), and North American Electric 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 runs this analysis for contingencies that may occur at system peak and off-peak load levels, under both summer and winter conditions. 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\\_Rev4.pdf](http://www.oatioasis.com/FPC/FPCdocs/ATCID_Posted_Rev4.pdf)
- [http://www.oatioasis.com/FPC/FPCdocs/TRMID\\_4.pdf](http://www.oatioasis.com/FPC/FPCdocs/TRMID_4.pdf)

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

- [http://www.oatioasis.com/FPC/FPCdocs/CBMID\\_rev3.pdf](http://www.oatioasis.com/FPC/FPCdocs/CBMID_rev3.pdf)

**CHAPTER 4**

***ENVIRONMENTAL AND  
LAND USE INFORMATION***



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

**PREFERRED SITES**

DEF's 2024 TYSP Preferred Sites include eight solar generations sites: the Mule Creek Solar Site, the Winquepin Solar Site, the Falmouth Solar Site, the County Line Solar Site, the Sundance Solar Site, the Bailey Mill Solar Site, the Half Moon Solar Site, and the Rattler Solar Site. These Preferred Sites are discussed below.



**MULE CREEK SOLAR SITE**

DEF has identified the Mule Creek Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Bay County, Florida. Mule Creek is the third project constructed in Bay County. The site was used for pasture lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection is a new 230 kV breaker in DEF’s existing Ladybug Switching Station and is connected via a short generation tie-line. All environmental surveys are complete. Solar is now a permitted use on agriculturally zoned land in a local government comprehensive plan in the State of Florida. Special or Conditional use permits are no longer required. However, a Development Order (Final Site Plan approval) was required from Bay County. An Environmental Resource Permit (ERP) from the Florida Department of Environmental Protection (FDEP) was received in November 2022. There were no wetland impacts on site and there are no impacts to listed species. The project started construction in the spring of 2023. Construction is substantially complete, and the expected in-service date is March 2024.

**FIGURE 4.1**  
**Mule Creek Solar Project**



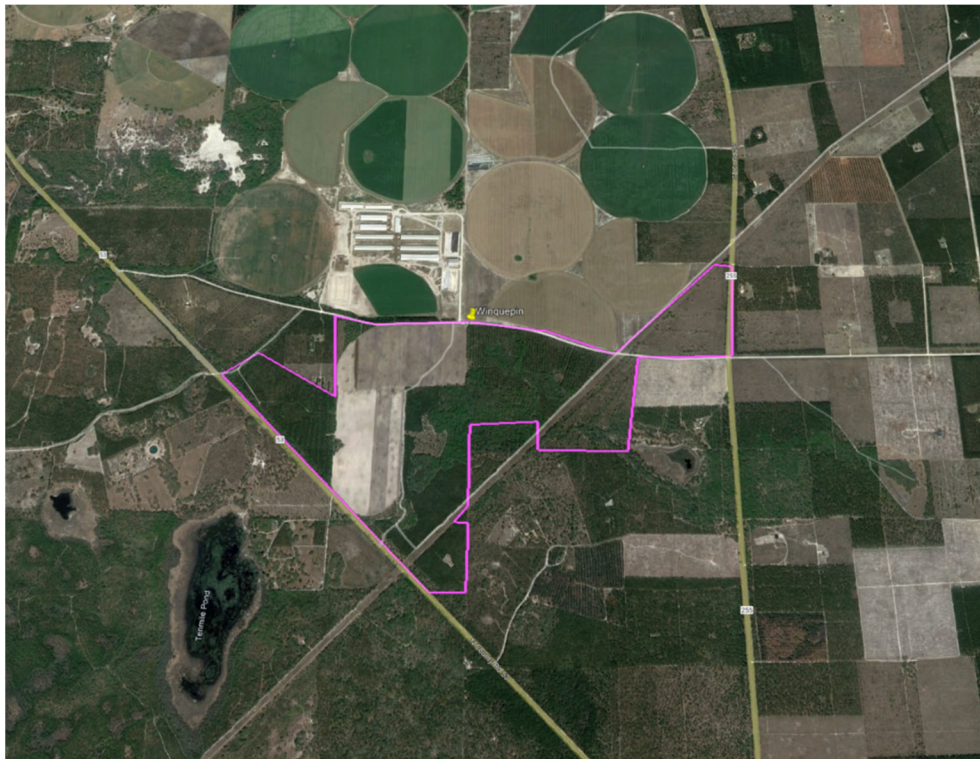
Mule Creek	2500 Sandy Creek Rd
	Panama City, FL 32404



**WINQUEPIN SOLAR SITE**

DEF has identified the Winquepin Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Madison County, Florida. The site is located on former agricultural and timber lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection is a new 230 kV, three terminal, three breaker switching station and is connected via a short generation tie-line. All environmental surveys are complete. Madison County approved the Final Site Plan and an ERP from FDEP was secured. There were no wetland impacts on site. State listed gopher tortoises were present onsite. The appropriate permit (Conservation/Relocation Permit) from the Florida Fish and Wildlife Conservation Commission (FWC) was secured. Tortoises have been relocated from the site. No additional listed species of concern were present. Construction began in the spring of 2023. Construction activities are substantially complete, and the expected in-service date is March 2024.

**FIGURE 4.2**  
**Winquepin Solar Project**

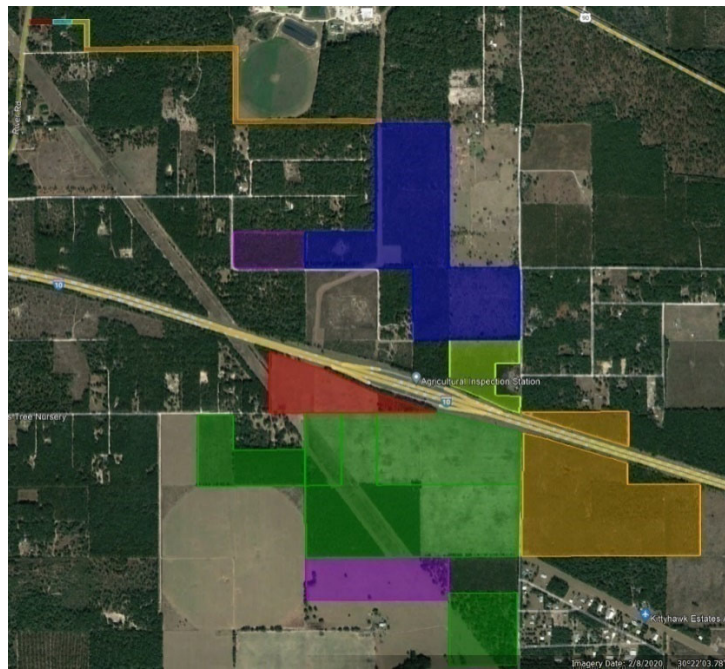


<u>Winquepin</u>	N. County Rd 53
	Madison, FL 32059

**FALMOUTH SOLAR SITE**

DEF has identified the Falmouth Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Suwannee County, Florida. Falmouth will be the third project constructed in Suwannee County. The site was historically used as pasture and timber lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection will be a new 115 kV breaker in DEF’s existing Suwannee Switching Station and will be connected via a 1.5-mile generation tie-line. All environmental surveys are complete. Suwannee County has provided Final Site Plan approval. The ERP was issued by FDEP on June 12, 2023. The two small wetlands on site, less than .5 acres total, were avoided thus there were no wetland impacts. The habitat assessment survey and subsequent species-specific surveys confirmed presence for the state-listed Southeastern American kestrel. Gopher tortoises were also present. FWC issued an Incidental Take Permit (ITP) for impacts to Southeastern American kestrel habitat and a Conservation/Relocation permit for gopher tortoises. Construction began in June of 2023. Construction is expected to complete by Q3 2024, with an expected in-service date of August 2024.

**FIGURE 4.3**  
**Falmouth Solar Project**



<u>Falmouth</u>	4431 River Rd
	Live Oak FL 32060

**COUNTY LINE SOLAR SITE**

DEF has identified the County Line Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Gilchrist County, Florida. The site was used for timber and pasture land and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection will be a new 230 kV breaker in DEF’s existing Ginnie Substation and will be connected via a short generation tie-line. Environmental surveys have been completed and confirmed the presence of state-listed Southeastern American kestrel and state-listed gopher tortoise. There are no wetlands onsite. Final Site Plan approval from Gilchrist County was received on November 14, 2023. FDEP issued the final ERP on July 25, 2023. There are no wetland impacts proposed. FWC issued an ITP for impacts to Southeastern American kestrel habitat and a Conservation/Relocation permit for gopher tortoises. All gopher tortoises have been relocated. Construction began in December 2023. The expected in-service date is October 2024.

**FIGURE 4.4**  
**County Line Solar Project**

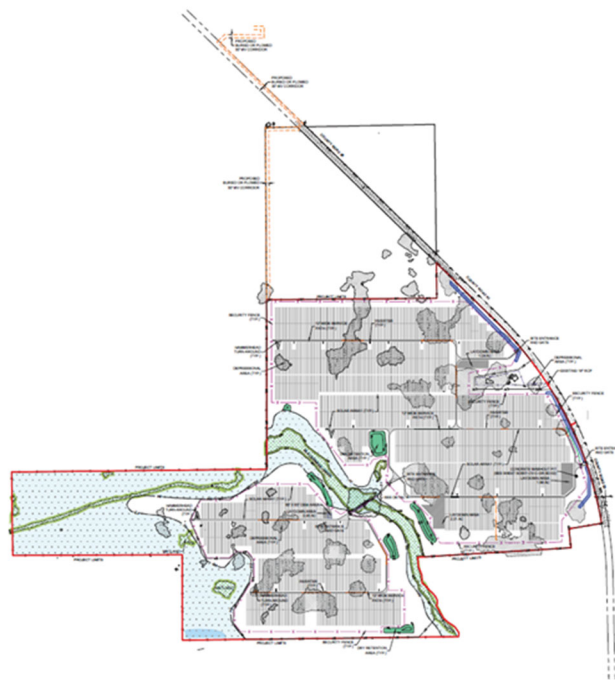


County Line	4960 NE 80th Blvd
	High Springs, FL 32643

## **SUNDANCE SOLAR SITE**

DEF has identified the Sundance Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Madison County, Florida. The site is located on former agricultural lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection will be a new breakered terminal in the 230 kV, three Birch switching station and will be connected via a mile generation tie-line. All environmental surveys are complete. Solar is a permitted use on agriculturally zoned land in a local government comprehensive plan in the State of Florida. Special or Conditional use permits are not required. However, a Site Plan approval is required from Madison County. An ERP from FDEP will also be required. DEF has applied for the ERP and expects to receive it early in spring 2024. There are several wetlands on site that will be avoided. State listed gopher tortoises were present onsite. The appropriate Relocation Permit from the FWC will be secured prior to construction. No additional listed species of concern were present. The project is expected to start construction in the spring of 2024, with an expected in-service date of early 2025.

**FIGURE 4.5**  
**Sundance Solar Project**



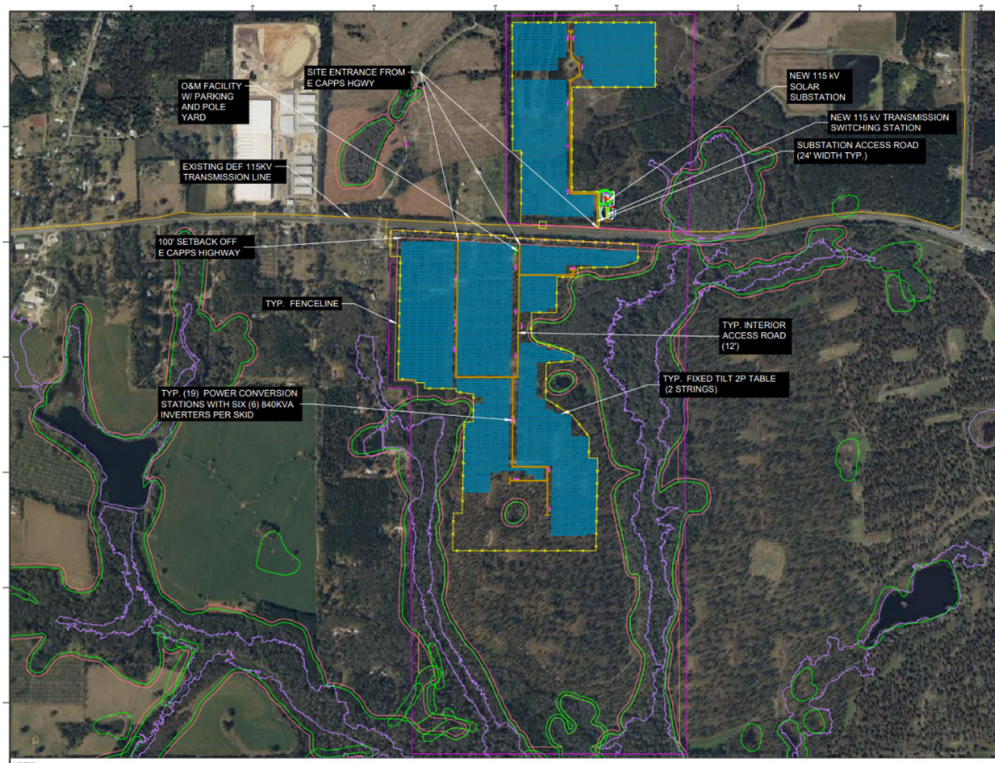
Sundance	16606 County Rd. 53
	Madison, FL 32059



**BAILEY MILL SOLAR SITE**

DEF has identified the Bailey Mill Renewable Energy Center, a 74.9 MWac solar Fixed tilt PV project located in Jefferson County, Florida. The site is located on timber and agricultural lands with some sloping that limits the use of a tracking system. The point of interconnection will be a new line tap on the Drifton to Waukeenah 115 kV line. All environmental surveys are complete. Solar is a permitted use on agriculturally zoned land in a local government comprehensive plan in the State of Florida. Special or Conditional use permits are not required. However, a Site Plan approval is required from Jefferson County. An ERP from FDEP will also be required. DEF intends to submit the ERP summer of 2024 and expects to receive it in late 2024. There are limited wetlands on site that will be avoided. State listed gopher tortoises were present onsite. The appropriate Relocation Permit from the FWC will be secured prior to construction. No additional listed species of concern were present. The project is expected to start construction in the spring of 2025, with an expected in-service date of December 2025.

**FIGURE 4.6**  
**Bailey Mill Solar Project**

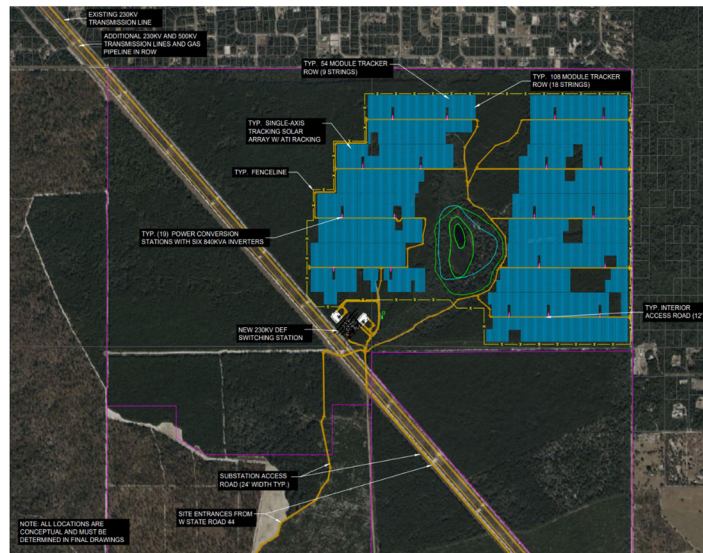


Bailey Mill	Jefferson County
	Zip Code 32344

**HALF MOON SOLAR SITE**

DEF has identified the Half Moon Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Sumter County, Florida. The site is located on merchantable timber lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection will be a new 230 kV, three terminal, three breaker switching station and is connected via a short generation tie-line. All environmental surveys are complete. Solar is a permitted use on agriculturally zoned land in a local government comprehensive plan in the State of Florida. Special or Conditional use permits are not required. However, a Site Plan approval is required from Sumter County. An ERP from FDEP will also be required. DEF intends to submit the ERP summer of 2024 and expects to receive it in late 2024. There are limited wetlands on site that will be avoided. State listed gopher tortoises were present onsite. The appropriate Relocation Permit from the FWC will be secured prior to construction. The Florida Scrub Jay was shown in the area, but not present on site. Consultation with the FWC will be completed prior to the start of construction. The project is expected to start construction in the spring of 2025, with an expected in-service date of December 2025.

**FIGURE 4.7**  
**Half Moon Solar Project**



<u>Half Moon</u>	County: Sumter	Latitude: 28.955619	Longitude: -82.159585
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## RATTLER SOLAR SITE

DEF has identified the Rattler Renewable Energy Center, a 74.9 MWac solar single-axis tracking PV project located in Hernando County, Florida. The site is located on agricultural lands and is relatively flat with minimal sloping that will allow for the use of a tracking system. The point of interconnection will be a new 69 kV, four breaker switching station and is connected via a ~2-mile generation tie-line. All environmental surveys are complete. Solar is a permitted use on agriculturally zoned land in a local government comprehensive plan in the State of Florida. Special or Conditional use permits are not required. However, a Site Plan approval is required from Hernando County. An ERP from FDEP will also be required. DEF intends to submit the ERP summer of 2024 and expects to receive it in late 2024. There are limited wetlands on site that will be avoided. State listed gopher tortoises were present onsite. The appropriate permit Relocation Permit from the FWC will be secured prior to construction. The project is expected to start construction in the spring of 2025, with an expected in-service date of December 2025.

**FIGURE 4.8**  
**Rattler Solar Project**

