

REVIEW OF THE  
**2021 TEN-YEAR SITE PLANS**  
OF FLORIDA'S ELECTRIC UTILITIES



FLORIDA  
PUBLIC  
SERVICE  
COMMISSION

---

OCTOBER 2021

---



# Table of Contents

---

List of Figures .....	iii
List of Tables .....	iv
List of Ten-Year Site Plan Utilities .....	v
Unit Type and Fuel Abbreviations.....	v
<b>Executive Summary .....</b>	<b>1</b>
Review of the 2021 Ten-Year Site Plans.....	2
Future Concerns .....	4
Conclusion .....	5
<b>Introduction.....</b>	<b>7</b>
Statutory Authority .....	7
Additional Resources .....	8
Structure of the Commission’s Review .....	9
Conclusion .....	9
<b>Statewide Perspective .....</b>	<b>11</b>
<b>Load Forecasting.....</b>	<b>13</b>
Electric Customer Composition.....	13
Growth Projections .....	14
Peak Demand .....	16
Electric Vehicles.....	17
Demand-Side Management (DSM) .....	20
Forecast Load & Peak Demand .....	22
<b>Renewable Generation.....</b>	<b>27</b>
Existing Renewable Resources .....	27
Non-Utility Renewable Generation .....	28
Customer-Owned Renewable Generation .....	28
Utility-Owned Renewable Generation.....	29
Planned Renewable Resources .....	29
Energy Storage Outlook.....	30
<b>Traditional Generation.....</b>	<b>32</b>
Existing Generation .....	32
Impact of EPA Rules .....	33
Modernization and Efficiency Improvements .....	34
Planned Retirements .....	35
Reliability Requirements .....	35
Fuel Price Forecast.....	37
Fuel Diversity .....	38

New Generation Planned .....	39
New Power Plants by Fuel Type.....	41
Commission’s Authority Over Siting .....	42
Transmission.....	42
<b>Utility Perspectives.....</b>	<b>43</b>
Florida Power & Light Company (FPL) & Gulf Power Company (GPC) .....	45
Duke Energy Florida, LLC (DEF) .....	57
Tampa Electric Company (TECO) .....	63
Florida Municipal Power Agency (FMPA) .....	69
Gainesville Regional Utilities (GRU).....	75
JEA.....	81
Lakeland Electric (LAK) .....	87
Orlando Utilities Commission (OUC) .....	93
Seminole Electric Cooperative (SEC) .....	99
City of Tallahassee Utilities (TAL) .....	105



## List of Figures

Figure 1: State of Florida - Growth in Customers and Sales .....	2
Figure 2: State of Florida - Natural Gas Generation.....	3
Figure 3: State of Florida - Current and Projected Installed Capacity by Fuel.....	4
Figure 4: TYSP Utilities - Comparison of Reporting Electric Utility Size.....	8
Figure 5: State of Florida - Electric Customer Composition in 2020 .....	13
Figure 6: National - 20 Year Average Climate Data by State (Continental US) .....	14
Figure 7: State of Florida - Growth in Customers and Sales .....	15
Figure 8: TYSP Utilities - Example Daily Load Curves.....	16
Figure 9: TYSP Utilities - Daily Peak Demand (2020 Actual).....	17
Figure 10: State of Florida - Historic & Forecast Seasonal Peak Demand & Annual Energy.....	23
Figure 11: State of Florida - Current and Projected Renewable Resources.....	29
Figure 12: TYSP Utilities - Planned Solar Installations .....	30
Figure 13: State of Florida - Electric Utility Installed Capacity by Decade .....	32
Figure 14: State of Florida - Projected Reserve Margin by Season.....	36
Figure 15: TYSP Utilities - Average Fuel Price of Reporting Electric Utilities.....	37
Figure 16: State of Florida - Natural Gas Generation.....	38
Figure 17: State of Florida - Historic and Forecast Generation by Fuel Type.....	39
Figure 18: State of Florida - Current and Projected Installed Capacity by Fuel.....	40
Figure 19: FPL & GPC Growth .....	46
Figure 20: FPL Demand and Energy Forecasts .....	48
Figure 21: GPC Demand and Energy Forecasts .....	49
Figure 22: FPL and GPC Reserve Margin Forecast.....	51
Figure 23: DEF Growth .....	58
Figure 24: DEF Demand and Energy Forecasts.....	59
Figure 25: DEF Reserve Margin Forecast .....	61
Figure 26: TECO Growth .....	64
Figure 27: TECO Demand and Energy Forecasts.....	65
Figure 28: TECO Reserve Margin Forecast .....	67
Figure 29: FMPA Growth.....	70
Figure 30: FMPA Demand and Energy Forecasts .....	71
Figure 31: FMPA Reserve Margin Forecast.....	73
Figure 32: GRU Growth .....	76
Figure 33: GRU Demand and Energy Forecasts.....	77
Figure 34: GRU Reserve Margin Forecast .....	79
Figure 35: JEA Growth.....	82
Figure 36: JEA Demand and Energy Forecasts .....	83
Figure 37: JEA Reserve Margin Forecast.....	85
Figure 38: LAK Growth.....	88
Figure 39: LAK Demand and Energy Forecasts.....	89
Figure 40: LAK Reserve Margin Forecast.....	91
Figure 41: OUC Growth .....	94
Figure 42: OUC Demand and Energy Forecasts.....	95
Figure 43: OUC Reserve Margin Forecast .....	97
Figure 44: SEC Growth .....	100
Figure 45: SEC Demand and Energy Forecasts.....	101
Figure 46: SEC Reserve Margin Forecast.....	103
Figure 47: TAL Growth.....	106
Figure 48: TAL Demand and Energy Forecasts .....	107
Figure 49: TAL Reserve Margin Forecast .....	109

## List of Tables

---

Table 1: TYSP Utilities - Estimated Number of Electric Vehicles by Service Territory .....	18
Table 2: TYSP Utilities - Estimated Number of Public PEV .....	19
Table 3: TYSP Utilities - Estimated Electric Vehicle Annual Energy Consumption (GWh).....	19
Table 4: TYSP Utilities - Accuracy of Retail Energy Sales Forecasts (Five-Year Rolling Average).....	25
Table 5: TYSP Utilities - Accuracy of Retail Energy Sales Forecasts - Annual Analysis .....	26
Table 6: State of Florida - Existing Renewable Resources.....	27
Table 7: State of Florida - Customer-Owned Renewable Growth.....	29
Table 8: State of Florida - Electric Generating Units to be Retired.....	35
Table 9: TYSP Utilities - Planned Natural Gas Units.....	41
Table 10: State of Florida - Planned Transmission Lines .....	42
Table 11: FPL and GPC Energy Generation by Fuel Type .....	50
Table 12: FPL Generation Resource Changes .....	54
Table 13: GPC Generation Resource Changes .....	55
Table 14: DEF Energy Generation by Fuel Type .....	60
Table 15: DEF Generation Resource Changes .....	62
Table 16: TECO Energy Generation by Fuel Type .....	66
Table 17: TECO Generation Resource Changes.....	68
Table 18: FMPA Energy Generation by Fuel Type.....	72
Table 19: GRU Energy Generation by Fuel Type .....	78
Table 20: GRU Generation Resource Changes.....	79
Table 21: JEA Energy Generation by Fuel Type.....	84
Table 22: LAK Energy Generation by Fuel Type.....	90
Table 23: LAK Generation Resource Changes.....	91
Table 24: OUC Energy Generation by Fuel Type .....	96
Table 25: SEC Energy Generation by Fuel Type.....	102
Table 26: SEC Generation Resource Changes.....	104
Table 27: TAL Energy Generation by Fuel Type .....	108

## List of Ten-Year Site Plan Utilities

Name	Abbreviation
<b>Investor-Owned Electric Utilities</b>	
Florida Power & Light Company	FPL
Duke Energy Florida, LLC	DEF
Tampa Electric Company	TECO
Gulf Power Company	GPC
<b>Municipal Electric Utilities</b>	
Florida Municipal Power Agency	FMPA
Gainesville Regional Utilities	GRU
JEA	JEA
Lakeland Electric	LAK
Orlando Utilities Commission	OUC
City of Tallahassee Utilities	TAL
<b>Rural Electric Cooperatives</b>	
Seminole Electric Cooperative	SEC

## Unit Type and Fuel Abbreviations

Reference	Name	Abbreviation
Unit Type	Battery Storage	BAT
	Combined Cycle	CC
	Combustion Turbine	CT
	Hydroelectric	HY
	Internal Combustion	IC
	Photovoltaic	PV
	Steam Turbine	ST
Fuel Type	Distillate Fuel Oil	DFO
	Bituminous Coal	BIT
	Natural Gas	NG



## Executive Summary

---

Integrated resource planning (IRP) is a utility process that includes a cost-effective combination of demand-side resources and supply-side resources. While each utility has slightly different approaches to IRP, some things are consistent across the industry. Each utility must update its load forecast assumptions based on Florida Public Service Commission (Commission) decisions in various dockets, such as demand-side management goals. Changes in government mandates, such as appliance efficiency standards, building codes, and environmental requirements must also be considered. Other updates involve input assumptions like demographics, financial parameters, generating unit operating characteristics, and fuel costs which are more fluid and do not require prior approval by the Commission. Each utility then conducts a reliability analysis to determine when resources may be needed to meet expected load. Next, an initial screening of demand-side and supply-side resources is performed to find candidates that meet the expected resource need. The demand-side and supply-side resources are combined in various scenarios to decide which combination meets the need most cost-effectively. After the completion of all these components, utility management reviews the results of the varying analyses and the utility's Ten-Year Site Plan (TYSP) is produced as the culmination of the IRP process. Commission Rules also require the utilities to provide aggregate data which provides an overview of the State of Florida electric grid.

The Commission's annual review of utility Ten-Year Site Plans is non-binding as required by Florida Statutes, but it does provide state, regional, and local agencies advance notice of proposed power plants and transmission facilities. Any concerns identified during the review of the utilities' Ten-Year Site Plans may be addressed by the Commission at a formal public hearing, such as a power plant need determination proceeding. While Florida Statutes and Commission Rules do not specifically define IRP, they do provide a solid framework for flexible, cost-effective utility resource planning. In this way, the Commission fulfills its oversight and regulatory responsibilities while leaving day-to-day planning and operations to utility management.

Pursuant to Section 186.801, Florida Statutes (F.S.), each generating electric utility must submit to the Commission a Ten-Year Site Plan which estimates the utility's power generating needs and the general locations of its proposed power plant sites over a 10-year planning horizon. The Ten-Year Site Plans of Florida's electric utilities summarize the results of each utility's IRP process and identifies proposed power plants and transmission facilities. The Commission is required to perform a preliminary study of each plan and classify each one as either "suitable" or "unsuitable." This document represents the review of the 2021 Ten-Year Site Plans for Florida's electric utilities, filed by 11 reporting utilities.<sup>1</sup>

All findings of the Commission are made available to the Florida Department of Environmental Protection for its consideration at any subsequent certification proceeding pursuant to the

---

<sup>1</sup> Investor-owned utilities filing 2021 Ten-Year Site Plans include Florida Power & Light Company (FPL), Duke Energy Florida, LLC. (DEF), Tampa Electric Company (TECO), and Gulf Power Company (GPC). Municipal utilities filing 2021 Ten-Year Site Plans include Florida Municipal Power Agency (FMPA), Gainesville Regional Utilities (GRU), JEA (formerly Jacksonville Electric Authority), Lakeland Electric (LAK), Orlando Utilities Commission (OUC), and City of Tallahassee Utilities (TAL). Seminole Electric Cooperative (SEC) also filed a 2021 Ten-Year Site Plan.

Electrical Power Plant Siting Act or the Electric Transmission Line Siting Act.<sup>2</sup> In addition, this document is sent to the Florida Department of Agriculture and Consumer Services pursuant to Section 377.703(2)(e), F.S., which requires the Commission provide a report on electricity and natural gas forecasts.

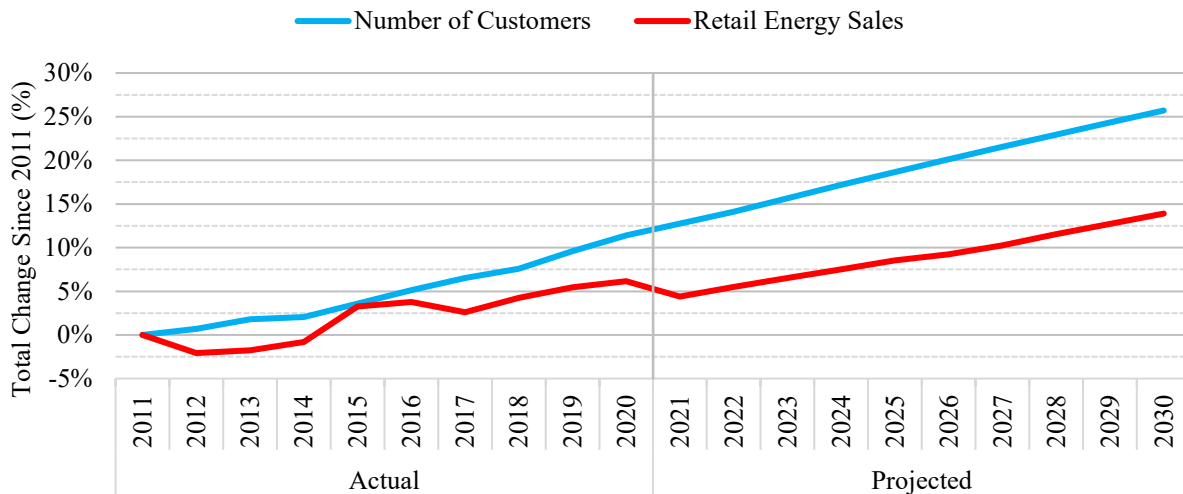
### Review of the 2021 Ten-Year Site Plans

The Commission has divided this review into two portions: (1) a Statewide Perspective, which covers the whole of Florida; and (2) Utility Perspectives, which address each of the reporting utilities. From a statewide perspective, the Commission has reviewed the implications of the combined trends of Florida’s electric utilities regarding load forecasting, renewable generation, and traditional generation.

### Load Forecasting

Forecasting load growth is an important component of system planning for Florida’s electric utilities. Florida’s electric utilities reduce the rate of growth in customer peak demand and annual energy consumption through demand-side management programs. The Commission, through its authority granted by Sections 366.80 through 366.83 and Section 403.519, F.S., otherwise known as the Florida Energy Efficiency and Conservation Act (FEECA), encourages demand-side management by establishing goals for the reduction of seasonal peak demand and annual energy consumption for those utilities under its jurisdiction. Figure 1 details these trends.

**Figure 1: State of Florida - Growth in Customers and Sales**



Source: FRCC 2021 Regional Load and Resource Plan

<sup>2</sup> The Electrical Power Plant Siting Act is Sections 403.501 through 403.518, F.S. Pursuant to Section 403.519, F.S., the Commission is the exclusive forum for the determination of need for an electrical power plant. The Electric Transmission Line Siting Act is Sections 403.52 through 403.5365, F.S. Pursuant to Section 403.537, F.S., the Commission is the sole forum for the determination of need for a transmission line.

## Renewable Generation

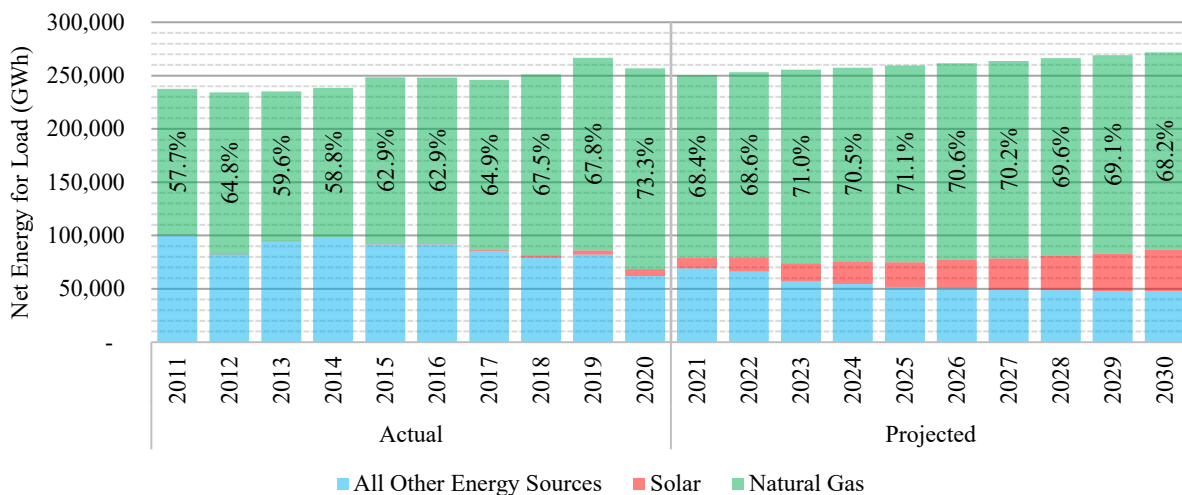
Renewable resources continue to expand in Florida, with approximately 6,156 megawatts (MW) of renewable generating capacity currently in Florida. The majority of installed renewable capacity is represented by solar photovoltaic (PV) generation which makes up approximately 75 percent of Florida’s renewables. Notably, Florida electric customers had installed 835 MW of demand-side renewable capacity by the end of 2020, an increase of 63 percent from 2019.

Florida’s total renewable resources are expected to increase by an estimated 15,055 MW over the 10-year planning period, excluding any potential demand-side renewable energy additions. Solar PV accounts for all of this increase. Some utilities are including a portion of these solar resources as a firm resource for reliability considerations. If these conditions continue, cost-effective forms of renewable generation will continue to improve the state’s fuel diversity and reduce dependence on fossil fuels. Also, FPL, GPC, and TECO have reported solar connected battery storage additions totaling 1,469 MW which are projected to increase the firm capacity available during system peaks.

## Traditional Generation

Generating capacity within Florida is anticipated to grow to meet the increase in customer demand, with an approximate net increase of 1,501 MW of traditional generation over the planning horizon. Natural gas electric generation, as a percent of net energy for load (NEL), is expected to range between an 68 and 71 percent NEL over the planning horizon. Figure 2 illustrates the use of natural gas as a generating fuel for electricity production in Florida compared to solar and all other energy sources combined.

**Figure 2: State of Florida - Natural Gas Generation**

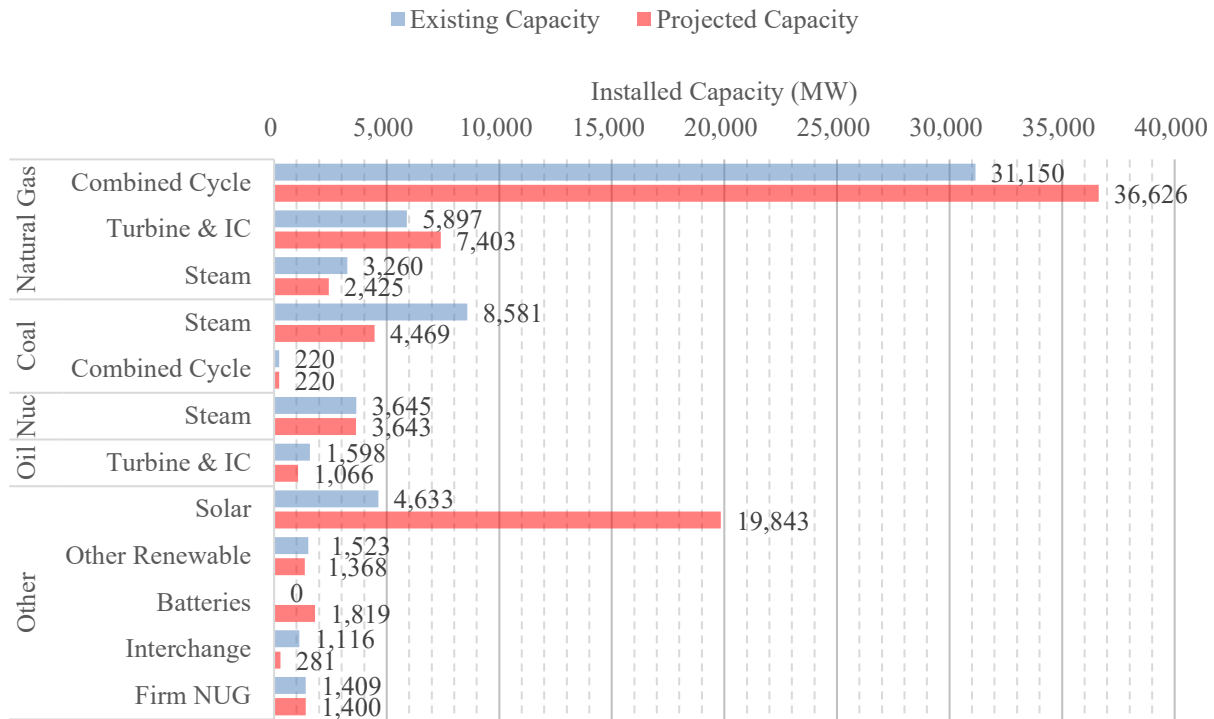


Source: FRCC 2012-2021 Regional Load and Resource Plan

Figure 3 illustrates the present and future aggregate capacity mix of Florida based on the 2021 Ten-Year Site Plans. The capacity values in Figure 3 incorporate all proposed additions, changes, and retirements planned during the 10-year period. While natural gas-fired generating units represent a majority of capacity within the state, renewable capacity additions make up the

majority of the projected net increase in generation capacity over the planning period. Given its projected net increase, renewable capacity is expected to surpass coal generation during the 10-year planning period, becoming the second highest installed capacity source in the state.

**Figure 3: State of Florida - Current and Projected Installed Capacity by Fuel**



Source: FRCC 2021 Regional Load and Resource Plan & TYSP Utilities’s Data Responses

As noted previously, the primary purpose of this review is to provide information regarding proposed electric power plants for local and state agencies to assist in the certification process. During the next 10 years, there are no new units planned that require a determination of need from the Commission.

### **Future Concerns**

Florida’s electric utilities must also consider changes in environmental regulations associated with existing generators and planned generation to meet Florida’s electric needs. Developments in U.S. Environmental Protection Agency (EPA) regulations may impact Florida’s existing generation fleet and proposed new facilities. For example, in January 2021, the U.S. Court of Appeals for the District of Columbia Circuit vacated the Affordable Clean Energy (ACE) rule addressing greenhouse gas emissions from electric power plants and remanded it to the EPA. However, as the Court did not expressly reinstate the Clean Power Plan (CPP), the EPA understands the decision as leaving neither of those rules, and thus no Clean Air Act (CAA) section 111(d) regulation, in place with respect to greenhouse gas emissions from electric generating units. These and other relevant EPA actions are further discussed in the Traditional Generation Section.



## ***Conclusion***

The Commission has reviewed the 2021 Ten-Year Site Plans of Florida's electric utilities and finds that the projections of load growth appear reasonable. The reporting utilities have identified sufficient additional generation facilities to maintain an adequate supply of electricity at a reasonable cost. The Commission will continue to monitor the impact of current and proposed EPA Rules and the state's dependence on natural gas for electricity production.

Based on its review, the Commission finds the 2021 Ten-Year Site Plans to be suitable for planning purposes. Since the plans are not a binding plan of action for electric utilities, the Commission's classification of these plans as suitable or unsuitable does not constitute a finding or determination in docketed matters before the Commission. The Commission may address any concerns raised by a utility's Ten-Year Site Plan at a public hearing.



## Introduction

---

The Ten-Year Site Plans of Florida's electric utilities are the culmination of an integrated resource plan which is designed to give state, regional, and local agencies advance notice of proposed power plants and transmission facilities. The Commission receives comments from these agencies regarding any issues with which they may have concerns. The Ten-Year Site Plans are planning documents that contain tentative data that is subject to change by the utilities upon written notification to the Commission.

For any new proposed power plants and transmission facilities, certification proceedings under the Florida Electrical Power Plant Siting Act, Sections 403.501 through 403.518, F.S., or the Florida Electric Transmission Line Siting Act, Sections 403.52 through 403.5365, F.S., will include more detailed information than is provided in the Ten-Year Site Plans. The Commission is the exclusive forum for determination of need for electrical power plants, pursuant to Section 403.519, F.S., and for transmission lines, pursuant to Section 403.537, F.S. The Ten-Year Site Plans are not intended to be comprehensive, and therefore may not have sufficient information to allow regional planning councils, water management districts, and other reviewing state and local agencies to evaluate site-specific issues within their respective jurisdictions. Other regulatory processes may require the electric utilities to provide additional information as needed.

### **Statutory Authority**

Section 186.801, F.S., requires all major generating electric utilities submit a Ten-Year Site Plan to the Commission at least every two years. Based on these filings, the Commission performs a preliminary study of each Ten-Year Site Plan and makes a non-binding determination as to whether it is suitable or unsuitable. The results of the Commission's study are contained in this report and are forwarded to the Florida Department of Environmental Protection for use in subsequent proceedings. In addition, Section 377.703(2)(e), F.S., requires the Commission to collect and analyze energy forecasts, specifically for electricity and natural gas, and forward this information to the Department of Agriculture and Consumer Services. The Commission has adopted Rules 25-22.070 through 25-22.072, Florida Administrative Code (F.A.C.) in order to fulfill these statutory requirements and provide a solid framework for flexible, cost-effective utility resource planning. In this way, the Commission fulfills its oversight and regulatory responsibilities while leaving day-to-day planning and operations to utility management.

### **Applicable Utilities**

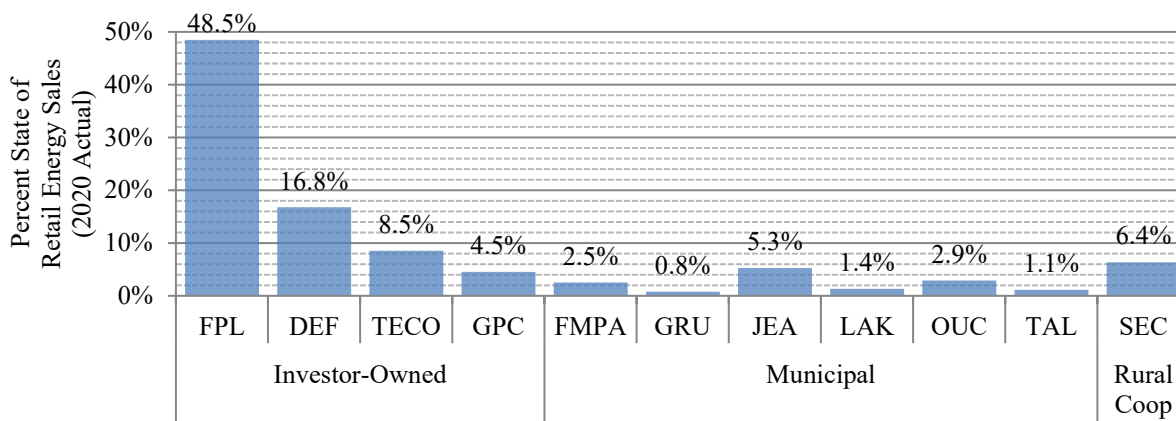
Florida is served by 57 electric utilities, including 5 investor-owned utilities, 34 municipal utilities, and 18 rural electric cooperatives. Pursuant to Rule 25-22.071(1), F.A.C., only generating electric utilities with an existing capacity above 250 megawatts (MW) or a planned unit with a capacity of 75 MW or greater are required to file a Ten-Year Site Plan with the Commission every year.

In 2021, 11 utilities met these requirements and filed a Ten-Year Site Plan, including 4 investor-owned utilities, 6 municipal utilities, and 1 rural electric cooperative. The investor-owned utilities, in order of size, are Florida Power & Light Company (FPL), Duke Energy Florida, LLC (DEF), Tampa Electric Company (TECO), and Gulf Power Company (GPC). The municipal utilities, in alphabetical order, are Florida Municipal Power Agency (FMPA), Gainesville Regional Utilities (GRU), JEA (formerly Jacksonville Electric Authority), Lakeland Electric (LAK), Orlando

Utilities Commission (OUC), and City of Tallahassee Utilities (TAL). The sole rural electric cooperative filing a 2021 Ten-Year Site Plan is Seminole Electric Cooperative (SEC). Collectively, these utilities are referred to as the Ten-Year Site Plan Utilities (TYSP Utilities).

Figure 4 illustrates the comparative size of the TYSP Utilities, in terms of each utility’s percentage share of the state’s retail energy sales in 2020. Combined, the reporting investor-owned utilities account for 78 percent of the state’s retail energy sales. The reporting municipal and cooperative utilities make up approximately 20 percent of the state’s retail energy sales.

**Figure 4: TYSP Utilities - Comparison of Reporting Electric Utility Size**



Source: 2021 Ten-Year Site Plans & FRCC 2021 Regional Load and Resource Plan

### Required Content

The Commission requires each reporting utility to provide information on a variety of topics as required by Section 186.801(2) F.S. Schedules describe the utility’s existing generation fleet, customer composition, demand and energy forecasts, fuel requirements, reserve margins, changes to existing capacity, and proposed power plants and transmission lines. The utilities also provide a narrative documenting the methodologies used to forecast customer demand and the identification of resources to meet that demand over the 10-year planning period. This information, supplemented by additional data requests, provides the basis of the Commission’s review.

### Additional Resources

The Florida Reliability Coordinating Council (FRCC) is tasked with reporting and collecting information on both a statewide basis and for Peninsular Florida, which excludes the area west of the Apalachicola River. This provides aggregate data for the Commission’s review. Each year, the FRCC publishes a Regional Load and Resource Plan, which contains historic and forecast data on demand and energy, capacity and reserves, and proposed new generating units and transmission line additions. For certain comparisons, the Commission employs additional data from various government agencies, including the Energy Information Administration and the Florida Department of Highway Safety and Motor Vehicles.

The Commission held a public workshop on August 11, 2021, to facilitate discussion of the annual planning process and allow for public comments. A presentation was conducted by the FRCC summarizing the 2021 Regional Load and Resource Plan and other related matters, including fuel supply reliability and the reliability considerations of utility solar generation additions. Additional presentations were made by the Southern Alliance for Clean Energy and Vote Solar.

### ***Structure of the Commission's Review***

The Commission's review is divided into multiple sections. The Statewide Perspective provides an overview of Florida as a whole, including discussions of load forecasting, renewable generation, and traditional generation. The Utility Perspectives provides more focus, discussing the various issues facing each electric utility and its unique situation. Comments collected from various review agencies, local governments, and other organizations are included in Appendix A.

### ***Conclusion***

Based on its review, the Commission finds all 11 reporting utilities' 2021 Ten-Year Site Plans to be suitable for planning purposes. During its review, the Commission has determined that the projections for load growth appear reasonable and that the reporting utilities have identified sufficient generation facilities to maintain an adequate supply of electricity at a reasonable cost.

The Commission notes that the Ten-Year Site Plans are non-binding, and a classification of suitable does not constitute a finding or determination in any docketed matter before the Commission, nor an approval of all planning assumptions contained within the Ten-Year Site Plans. The Commission may address any concerns raised by a utility's Ten-Year Site Plan at a public hearing.



# Statewide Perspective





## Load Forecasting

---

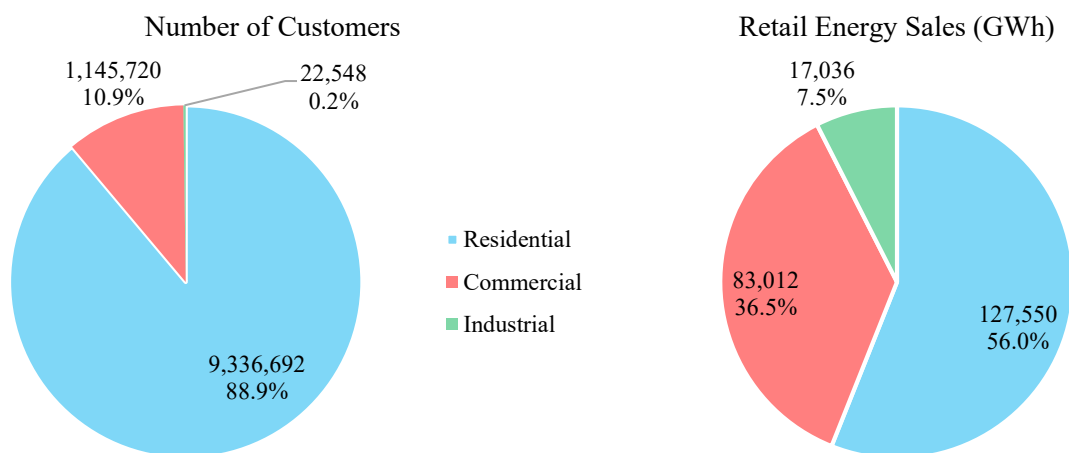
Forecasting load growth is an important component of the IRP process for Florida’s electric utilities. In order to maintain system reliability, utilities must be prepared for future changes in electricity consumption, including changes to the number of electric customers, customer usage patterns, building codes, appliance efficiency standards, new technologies, and the role of demand-side management.

### **Electric Customer Composition**

Utility companies categorize their customers by residential, commercial, and industrial classes. As of January 1, 2021, residential customers account for 88.9 percent of the total, followed by commercial (10.9 percent) and industrial (0.2 percent) customers, as illustrated in Figure 5. Commercial and industrial customers make up a sizeable percentage of energy sales due to their higher energy usage per customer.

---

**Figure 5: State of Florida - Electric Customer Composition in 2020**



Source: FRC-C 2021 Regional Load and Resource Plan

---

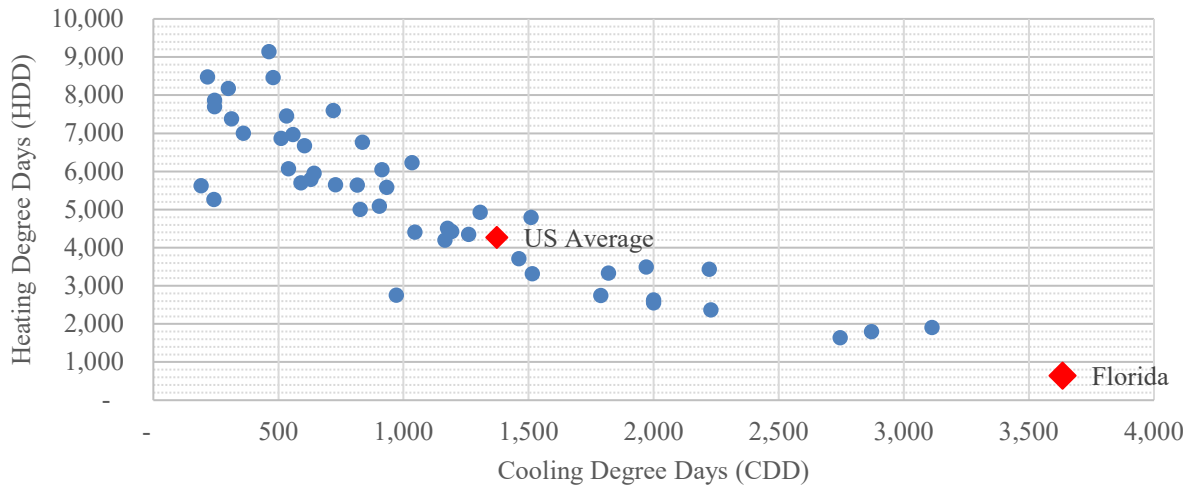
Residential customers in Florida make up the largest portion of retail energy sales. Florida’s residential customers accounted for 56 percent of retail energy sales in 2020, compared to a national average of approximately 34 percent.<sup>3</sup> As a result, Florida’s utilities are influenced more by trends in residential energy usage, which tend to be associated with weather conditions. In addition, Florida’s residential customers rely more upon electricity for heating than the national average, with only a small portion using alternate fuels such as natural gas or oil for home heating needs.

---

<sup>3</sup> U.S. Energy Information Administration June 2021 Electric Power Monthly.

Florida’s unique climate plays an important role in electric utility planning, with the highest number of cooling degree days and lowest number of heating degree days within the continental United States, as shown in Figure 6. Other states tend to rely upon alternative fuels for heating, but Florida’s heavy use of electricity results in high winter peak demand.

**Figure 6: National - 20 Year Average Climate Data by State (Continental US)**

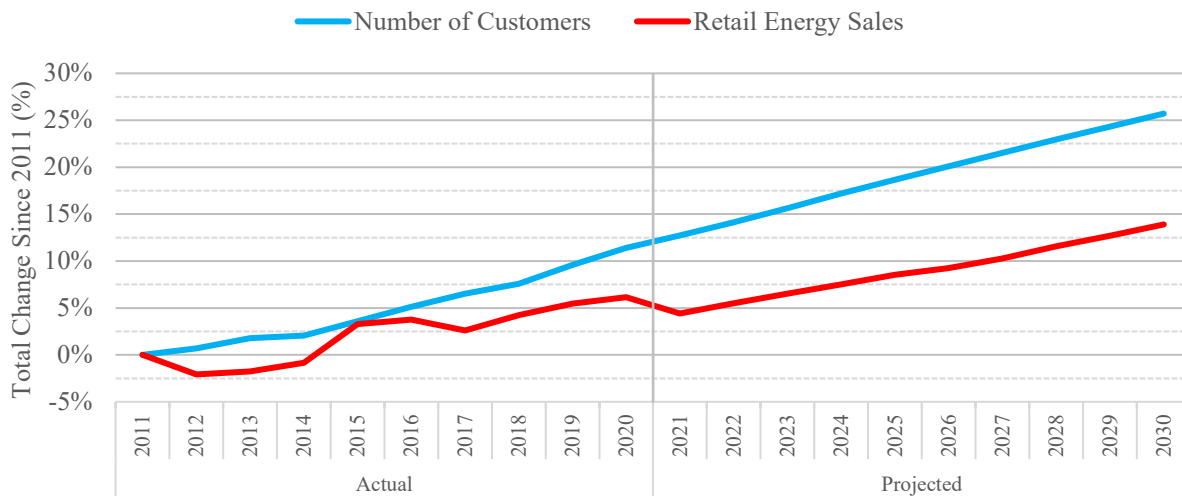


Source: National Oceanic and Atmospheric Administration Data

### **Growth Projections**

For the next 10-year period, Florida’s retail energy sales, weather normalized, are projected to grow at 0.97 percent per year, compared to the 0.67 percent actual annual increase experienced during the 2011-2020 period. The number of Florida’s electric utility customers is anticipated to grow at an average annual rate of about 1.22 percent for the next 10-year period, similar to the 1.21 percent actual annual increase experienced during the last decade. These trends are showcased in Figure 7.

**Figure 7: State of Florida - Growth in Customers and Sales**



Source: FRCC 2021 Regional Load and Resource Plan

The projected retail energy sales trend reflects the product of the utilities' forecasted number of customers and forecasted energy consumption per customer. The key factor affecting utilities' number of customers is population growth. The key factors affecting utilities' use-per-customer includes weather, the economy, energy prices, and energy efficiency; hence, the corresponding information is utilized to develop the forecast models for projecting the future growth of use-per-customer. The projected growth rate of retail energy sales is impacted by these underlying key factors.

FPL and GPC indicated that improvements to energy efficiency are expected to continuously play a role in the level of growth of per customer energy usage over the next several years. DEF reported that, for residential and commercial classes, the non-weather trends in per customer usage are primarily driven by fluctuations in electric price, end-use appliance saturation and efficiency improvement, building codes, and housing type/size. DEF also noted that customer self-generation has begun to make an impact. A small percentage of industrial/commercial customers have chosen to install their own natural gas generation, and some residential and commercial customers have installed solar panels behind their meters, thereby reducing consumption from the power grid. Offsetting these factors to some extent, DEF noted that the penetration of plug-in electric vehicles has grown, leading to an increase in residential use per customer, all else being equal. TECO confirmed that increases in appliance/lighting efficiencies, energy efficiency of new homes, conservation efforts and housing mix are the primary drivers affecting the per customer usage. Other TYSP Utilities likewise revealed that the downward pressure to the growth trend of per customer energy consumption is due to advancements in efficient technologies, renewable generation, and alternative energy sources.

As shown in Figure 7, Florida utilities' total retail energy sales reached a historic peak in 2020. This is primarily due to the COVID-19 Pandemic which resulted in more people working and/or schooling from home. All of the TYSP Utilities reported decreased commercial energy sales and some reported decreased industrial energy sales as well in 2020 which was off-set by the growth

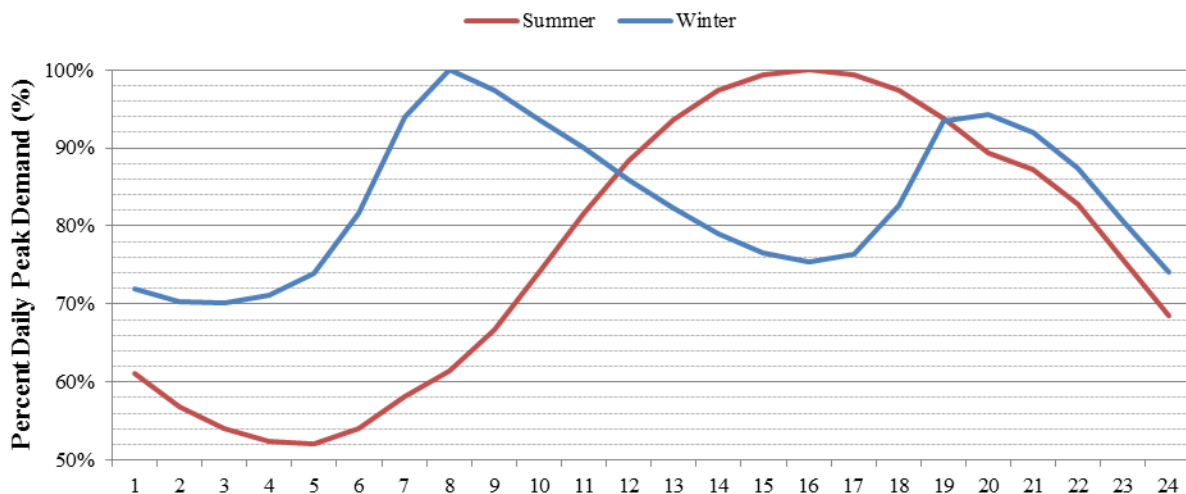
of the residential energy sales. For the forecast period, the annual growth rate of the residential sales may return to the pre-Pandemic level in 2021 with the waning of the “stay-at-home” status of customers. However, some potential COVID-related concerns remain which include uncertainty in the commercial sector as business floor space requirements may be permanently scaled back from previously planned levels and some closed small businesses may not be re-purposed or re-open for some time.

### **Peak Demand**

The aggregation of each individual customer’s electric consumption must be met at all times by Florida’s electric utilities to ensure reliable service. The time at which customers demand the most energy simultaneously is referred to as peak demand. While retail energy sales dictate the amount of fuel consumed by the electric utilities to deliver energy, peak demand determines the amount of generating capacity required to deliver that energy at a single moment in time.

Seasonal weather patterns are a primary factor, with peak demands calculated separately for the summer and winter periods annually. The influence of residential customers is evident in the determination of these seasonal peaks, as they correspond to times of increased usage to meet home heating (winter) and cooling (summer) demand. Figure 8 illustrates a daily load curve for a typical day for each season. In summer, air-conditioning needs increase throughout the day, climbing steadily until a peak is reached in the late afternoon and then declining into the evening. In winter, electric heat and electric water heating produce a higher base level of usage, with a spike in the morning and an additional spike in the evening.

**Figure 8: TYSP Utilities - Example Daily Load Curves**



Source: TYSP Utilities’ Data Responses

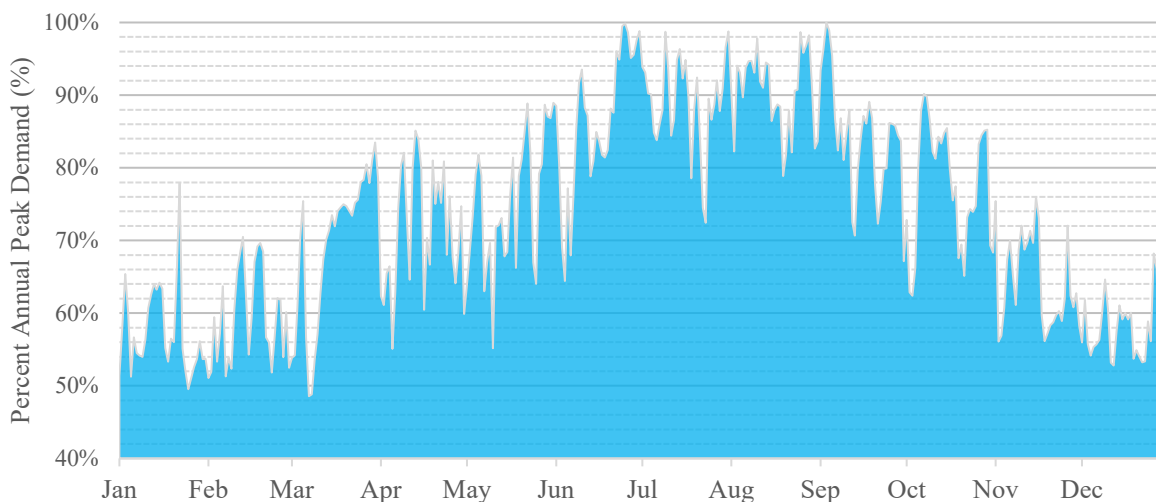
Florida is typically a summer-peaking state, meaning that the summer peak demand generally exceeds winter peak demand, and therefore controls the amount of generation required. Higher temperatures in summer also reduce the efficiency of generation, with high water temperatures reducing the quality of cooling provided, and can sometimes limit the quantity as units may be

required to operate at reduced power or go offline based on environmental permits. Conversely, in winter, utilities can take advantage of lower ambient air and water temperatures to produce more electricity from a power plant.

As daily load varies, so do seasonal loads. Figure 9 shows the 2020 daily peak demand as a percentage of the annual peak demand for the reporting investor-owned utilities combined. Typically, winter peaks are short events while summer demand tends to stay at near peak levels for longer periods. A particularly mild winter in 2020 reduced the winter seasonal demand peaks due to reduced heating load. The periods between seasonal peaks are referred to as shoulder months, in which the utilities take advantage of lower demand to perform maintenance without impacting their ability to meet daily peak demand.

---

**Figure 9: TYSP Utilities - Daily Peak Demand (2020 Actual)**



Source: TYSP Utilities' Data Responses (Investor-Owned Utilities Only)

---

Florida's utilities assume normalized weather in forecasts of peak demand. During operation of their systems, they continuously monitor short-term weather patterns. Utilities adjust maintenance schedules to ensure the highest unit availability during the utility's projected peak demand, bringing units back online if necessary or delaying maintenance until after a weather system has passed.

### ***Electric Vehicles***

Utilities also examine other trends that may impact customer peak demand and energy consumption. These include new sources of energy consumption, such as electric vehicles. The reporting electric utilities estimate approximately 79,999 electric plug-in vehicles will be operating in Florida by the end of 2021. The Florida Department of Highway Safety and Motor Vehicles lists the number of registered automobiles, heavy trucks, and buses in Florida, as of January 10,

2021, at 17.35 million vehicles, resulting in an approximate 0.46 percent penetration rate of electric vehicles.<sup>4</sup>

Florida’s electric utilities anticipate growth in the electric vehicle market, as illustrated in Table 1. Electric vehicle ownership is anticipated to grow rapidly throughout the planning period, resulting in approximately 694,375 electric vehicles operating within the electric service territories by the end of 2030.

**Table 1: TYSP Utilities - Estimated Number of Electric Vehicles by Service Territory**

Year	FPL	DEF	TECO	GULF	JEA	GRU	LAK*	TAL	Total
2021	49,282	17,473	6,530	1,981	2,335	501	477	1,420	79,999
2022	59,636	23,235	7,815	2,397	2,764	622	N/A	1,435	97,904
2023	75,862	31,809	9,321	3,049	3,297	767	N/A	1,449	125,554
2024	97,925	43,235	11,052	3,936	3,924	941	N/A	1,463	162,476
2025	127,482	57,796	13,049	5,124	4,642	1,147	N/A	1,478	210,718
2026	168,680	73,955	15,183	6,780	5,450	1,388	N/A	1,493	272,929
2027	222,806	91,689	17,456	8,955	6351	1,669	N/A	1,508	350,434
2028	291,594	111,252	19,869	11,720	7366	1,995	N/A	1,524	445,320
2029	375,053	132,778	22,425	15,074	8502	2,368	N/A	1,600	557,800
2030	479,126	156,694	25,125	19,257	9766	2,791	N/A	1,616	694,375

Source: TYSP Utilities’ Data Responses

\*LAK did not provide projected electric vehicle counts for years 2022-2030; 2021 estimate is based on DMV data for Polk County

The major drivers of electric vehicle growth include lower fuel costs and emissions, increased availability of charging infrastructure, and federal tax credits and state incentives associated with the purchase of an electric vehicle.

Private entities, municipalities, government agencies, and recently electric utilities are expanding charging infrastructure throughout the state to meet this expected growth in electric vehicles as well as to promote electric vehicle ownership. As a result of legislation passed in 2020, the Commission and the State Energy Office assisted the Florida Department of Transportation in coordinating, developing, and recommending a master plan for the development of electric vehicle charging station infrastructure along the State Highway System. The EV Infrastructure Master Plan was published in July 2021.<sup>5</sup>

Table 2 illustrates the reporting electric utilities’ projections of public electric vehicle charging stations through 2030. While approximately 6,000 charging stations are estimated to be available in 2021, more than 29,000 charging stations are anticipated by 2030. The estimated PEV charging station counts listed in Table 2 include both normal and “quick-charge” public charging stations.<sup>6</sup>

<sup>4</sup> Florida Department of Highway Safety and Motor Vehicles January 2020 Vehicle and Vessel Reports and Statistics.

<sup>5</sup> Florida Department of Transportation, *EV Infrastructure Master Plan*, published July 2021.

<sup>6</sup> “Quick-charge” PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

**Table 2: TYSP Utilities - Estimated Number of Public PEV Charging Stations by Service Territory**

Year	FPL	DEF*	TECO	GULF	JEA	GRU	LAK**	TAL	Total
2021	4,007	1,006	386	165	97	78	18	34	5,791
2022	5,286	N/A	433	218	110	86	N/A	34	6,167
2023	7,320	N/A	479	302	125	94	N/A	34	8,354
2024	9,210	N/A	525	380	141	104	N/A	34	10,394
2025	11,437	N/A	571	472	159	114	N/A	38	12,791
2026	13,815	N/A	617	570	178	126	N/A	38	15,344
2027	16,534	N/A	663	682	199	138	N/A	38	18,254
2028	20,377	N/A	710	841	222	152	N/A	40	22,342
2029	24,580	N/A	756	1,014	247	187	N/A	40	26,824
2030	26,857	N/A	802	1,108	275	184	N/A	40	29,266

Source: TYSP Utilities' Data Responses

\* DEF is currently developing a charger forecasting tool; 2021 estimate is based on year-end 2020 actuals.

\*\* LAK did not provide projected public PEV charging station counts for years 2022-2030; 2021 estimate is based on DMV data for Polk County.

Table 3 illustrates the TYSP Utilities' projections of energy consumed by electric vehicles through 2030. Across the TYSP Utilities, anticipated growth would result in an annual energy consumption of 3,387.4 gigawatt-hours (GWh) by 2030. Despite this relatively rapid growth rate, current estimates represent an impact of less than 1.5 percent on net energy for load by 2030.

**Table 3: TYSP Utilities - Estimated Electric Vehicle Annual Energy Consumption (GWh)**

Year	FPL	DEF	TECO	GULF	JEA	GRU	LAK*	TAL*	Total
2021	42.6	7.6	27.6	1.0	8.5	1.8	N/A	N/A	89.1
2022	112.3	27.1	32.9	2.4	10.7	2.2	N/A	N/A	187.6
2023	216.9	54.1	39.2	4.8	13.4	2.8	N/A	N/A	331.2
2024	361.7	91.9	46.4	8.0	16.6	3.4	N/A	N/A	528.0
2025	554.6	140.7	54.6	12.2	20.3	4.1	N/A	N/A	786.5
2026	812.9	199.1	63.5	18.2	24.4	5.0	N/A	N/A	1,123.1
2027	1,144.6	263.8	72.9	26.0	29.0	6.0	N/A	N/A	1,542.3
2028	1,558.3	336.3	82.8	35.9	34.2	7.2	N/A	N/A	2,054.7
2029	2,056.2	414.9	93.4	48.0	40.0	8.5	N/A	N/A	2,661.0
2030	2,660.0	503.3	104.5	63.0	46.5	10.1	N/A	N/A	3,387.4

Source: TYSP Utilities' Data Responses

\*TAL and LAK did not provide estimates of electric vehicle annual energy consumption.

The effect of increased electric vehicle ownership on peak demand is difficult to determine. While comparable in electric demand to a home air conditioning system, the time of charging and whether charging would be shifted away from periods of peak demand are uncertain. As electric vehicle ownership increases, the projected impacts of electric vehicles on system peak demand should become clearer and electric utilities will be better positioned to respond accordingly.

In order to investigate potential unknowns associated with the electric vehicle energy market in Florida, several utilities have initiated electric vehicle pilot programs, either as independent programs or as part of rate case settlement agreements. The nature of these pilot programs vary among utilities, but include investments in vehicle charging infrastructure, research partnerships, and electric vehicle rebate programs. Utilities will note key findings and track metrics of interest within these pilot programs to help inform the Commission regarding the future power needs of electric vehicles in Florida.

### ***Demand-Side Management (DSM)***

Florida's electric utilities also consider how the efficiency of customer energy consumption changes over the planning period. Changes in government mandates, such as building codes and appliance efficiency standards, reduce the amount of energy consumption for new construction and electric equipment. Electric customers, through the power of choice, can elect to engage in behaviors that decrease peak load or annual energy usage. Examples include: turning off lights and fans in vacant rooms, increasing thermostat settings, and purchasing appliances that go beyond efficiency standards. While a certain portion of customers will engage in these activities without incentives due to economic, aesthetic, or environmental concerns, other customers may lack information or require additional incentives. DSM represents an area where Florida's electric utilities can empower and educate its customers to make choices that reduce peak load and annual energy consumption.

### **Florida Energy Efficiency and Conservation Act (FEECA)**

The Florida Legislature has directed the Commission to encourage utilities to decrease the growth rates in seasonal peak demand and annual energy consumption by establishing FEECA, which consists of Sections 366.80 through 366.83 and Section 403.519, F.S. Under FEECA, the Commission is required to set goals for seasonal demand and annual energy reduction for seven electric utilities, known as the FEECA Utilities. These include the five investor-owned electric utilities, FPL, DEF, TECO, GPC, and Florida Public Utility Company (which is a non-generating utility and therefore does not file a Ten-Year Site Plan) and two municipal electric utilities, JEA and OUC. The FEECA Utilities represented approximately 87 percent of 2020 retail electric sales in Florida.

The FEECA Utilities currently offer demand-side management programs for residential, commercial, and industrial customers. Energy audit programs are designed to provide an overview of customer energy usage and to evaluate conservation opportunities, including behavioral changes, low-cost measures customers can undertake themselves, and participation in utility-sponsored DSM programs.

The last FEECA goal-setting proceeding was completed in November 2019, establishing goals for the period 2020 through 2024. The Commission found that it was in the public interest to continue with the goals established in the 2014 FEECA goal-setting proceeding. All FEECA Utilities that filed a 2021 Ten-Year Site Plan incorporated in their planning the impacts of the established DSM goals through 2024.



Each FEECA electric utility was required to submit a proposed DSM Plan designed to meet the goals established in the most recent FEECA goal-setting proceeding within 90 days of the final order establishing the goals. Each FEECA electric utility submitted a proposed DSM Plan on or before February 24, 2020. On May 12, 2020, and June 24, 2020, the Commission approved the DSM Plans proposed by OUC and JEA, respectively. On July 7, 2020, the Commission voted to approve the DSM Plans proposed by the remaining FEECA electric utilities.

## **DSM Programs**

DSM Programs generally are divided into three categories: interruptible load, load management, and energy efficiency. The first two are considered dispatchable, and are collectively known as demand response, meaning that the utility can call upon them during a period of peak demand or other reliability concerns, but otherwise they are not utilized. In contrast, energy efficiency measures are considered passive and are always working to reduce customer demand and energy consumption.

Interruptible load is achieved through the use of agreements with large customers to allow the utility to interrupt the customer's load, reducing the generation required to meet system demand. Interrupted customers may use back-up generation to fill their energy needs, or cease operation until the interruption has passed. A subtype of interruptible load is curtailable load, which allow the utility to interrupt only a portion of the customer's load. In exchange for the ability to interrupt these customers, the utility offers a discounted rate for energy or other credits which are paid for by all ratepayers.

Load management is similar to interruptible load, but focuses on smaller customers and targets individual appliances. The utility installs a device on an electric appliance, such as a water heater or air conditioner, which allows for remote deactivation for a short period of time. Load management activations tend to have less advanced notice than those for interruptible customers, but tend to be activated only for short periods and are cycled through groups of customers to reduce the impact to any single customer. Due to the focus on specific appliances, certain appliances would be more appropriate for addressing certain seasonal demands. For example, load management programs targeting air conditioning units would be more effective to reduce a summer peak, while water heaters are more effective for reducing a winter peak.

As of December 31, 2020, demand response available for reduction of peak load is 3,114 MW for summer peak and 2,917 MW for winter peak. Demand response is anticipated to increase to approximately 3,437 MW for summer peak and 3,162 MW for winter peak by 2030.

Energy efficiency or conservation measures also have an impact on peak demand, and due to their passive nature do not require activation by the utility. Conservation measures include improvements in a home or business' building envelope to reduce heating or cooling needs, or the installation of more efficient appliances. By installing additional insulation, energy-efficient windows or window films, and more efficient appliances, customers can reduce both their peak demand and annual energy consumption, leading to reductions in customer bills. Demand-side management programs work in conjunction with building codes and appliance efficiency standards to increase energy savings above the minimum required by local, state, or federal regulations. As of December 31, 2020, energy efficiency is responsible for peak load reductions of 4,518 MW for

summer peak and 4,027 MW for winter peak. Energy efficiency is anticipated to increase to approximately 6,296 MW for summer peak and 5,527 MW for winter peak by 2030.

### ***Forecast Load & Peak Demand***

The historic and forecasted seasonal peak demand and annual energy consumption values for Florida are illustrated in Figure 10. The forecasts shown below are based upon normalized weather conditions, while the historic demand and energy values represent the actual impact of weather conditions on Florida's electric customers. Florida relies heavily upon both air conditioning in the summer and electric heating in the winter, so both seasons experience a great deal of variability due to severe weather conditions.

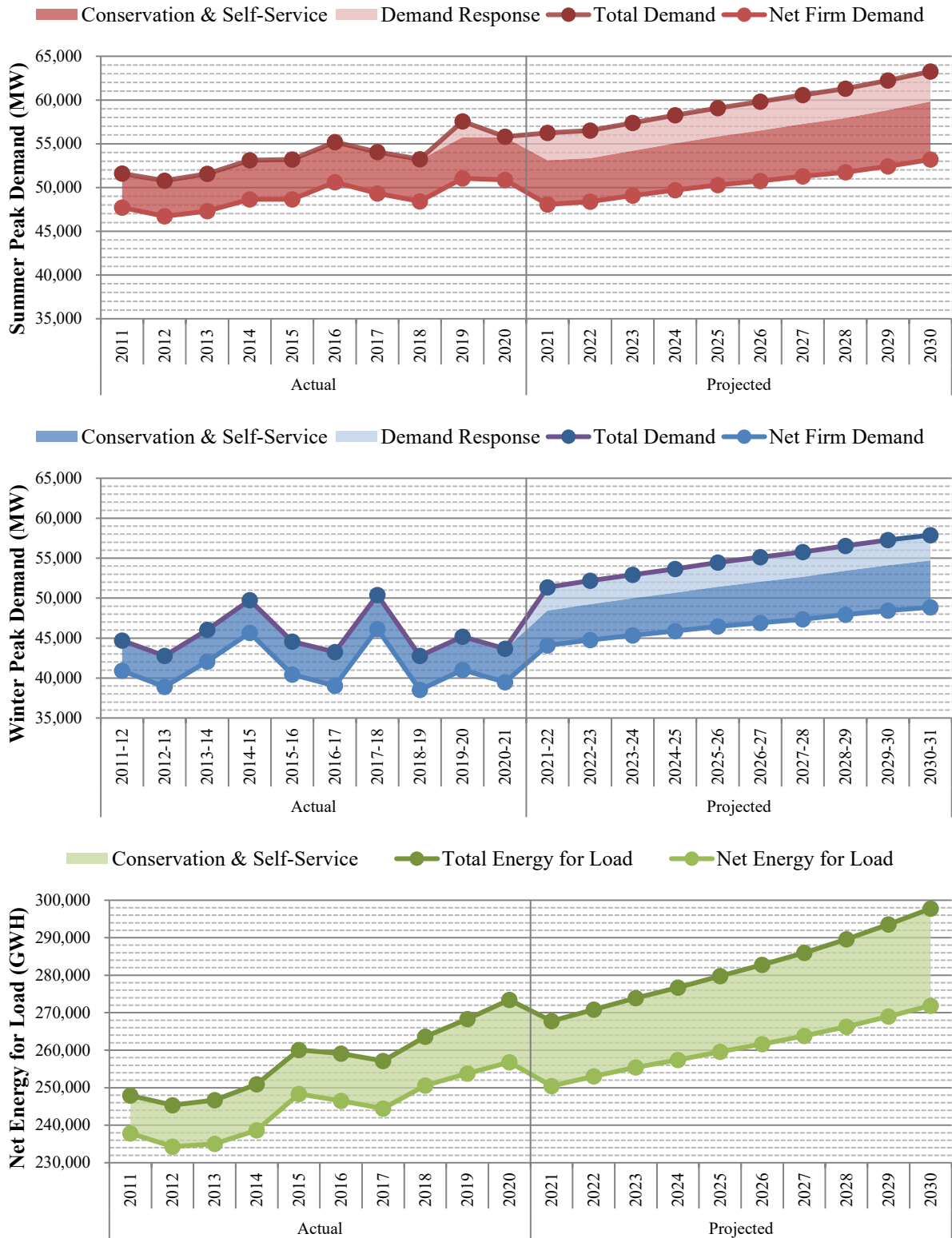
Demand-side management, including demand response and energy efficiency, along with self-service generation, is included in each graph appearing in Figure 10 for seasonal peak demand and annual energy for load. The total demand or total energy for load represents what otherwise would need to be served if not for the impact of these programs and self-service generators. The net firm demand is used as a planning number for the calculation of generating reserves and determination of generation needs for Florida's electric utilities.

Demand response is included in Figure 10 in two different ways based upon the time period considered. For historic values of seasonal demand, the actual rates of demand response activation are shown, not the full amount of demand response that was available at the time. Overall, demand response has only been partially activated as sufficient generation assets were available during the annual peak. Residential load management has been called upon to a limited degree during peak periods, with a lesser amount of interruptible load activated.

For forecast values of seasonal demand, it is assumed that all demand response resources will be activated during peak. The assumption of all demand response being activated reduces generation planning need. Based on operating conditions in the future, if an electric utility has sufficient generating units, and it is economical to serve all customers' load demand, response would not be activated or only partially activated in the future.

As previously discussed, Florida is normally a summer-peaking state and was for the past 10 years. This trend is anticipated to continue, with the next 10 forecasted years all anticipated to be summer peaking. Based upon current forecasts using normalized weather data, Florida's electric utilities anticipate a gradual increase in both summer and winter net firm demand during the planning period.

**Figure 10: State of Florida - Historic & Forecast Seasonal Peak Demand & Annual Energy**



Source: FRCC 2021 Regional Load and Resource Plan

## **Forecast Methodology**

Florida's electric utilities perform forecasts of peak demand and annual energy sales using various forecasting models, including econometric and end-use models, and other forecasting techniques such as surveys. In the development of econometric models, the utilities use historical data sets including dependent variables (e.g. summer peak demand per customer, residential energy use per customer) and independent variables (e.g. cooling degree days, real personal income, etc.) to infer relationships between the two types of variables. These historical relationships, combined with available forecasts of the independent variables and the utilities' forecasts of customers, are then used to forecast the peak demand and energy sales. For some customer classes, such as industrial customers, surveys may be conducted to determine the customers' expectations for their own future electricity consumption.

The forecasts also account for demand-side management programs. Sales models are prepared by revenue class (e.g. residential, small and large commercial, small and large industrial, etc.). Commonly, the results of the models must be adjusted to take into account exogenous impacts, such as the impact of the recent growth in plug-in electric vehicles and distributed generation.

End-use models are sometimes used to project energy use in conjunction with econometric models. These models can capture trends in appliance and equipment saturation and efficiency, as well as building size and thermal efficiency, on customers' energy use. If such end-use models are not used, the econometric models for energy often include an index comprised of efficiency standards for air conditioning, heating, and appliances, as well as construction codes for recently built homes and commercial buildings.

Florida's electric utilities rely upon data which is sourced from public and private entities for historic and forecast values of specific independent variables used in econometric modeling. Public resources such as the University of Florida's Bureau of Economic and Business Research, which provides county-level data on population growth, and the U.S. Department of Commerce's Bureau of Labor Statistics, which publishes the Consumer Price Index, are utilized along with private forecasts for economic growth from macroeconomic experts, such as Moody's Analytics. By combining historic and forecast macroeconomic data with customer and climate data, Florida's electric utilities project future load conditions.

The various forecast models and techniques used by Florida's electric utilities are commonly used throughout the industry, and each utility has developed its own individualized approach to project load. The resulting forecasts allow each electric utility to evaluate its individual needs for new generation, transmission, and distribution resources to meet customers' current and future needs reliably and affordably.

For each reporting electric utility, the Commission reviewed the historic forecast accuracy of past retail energy sales forecasts. The standard methodology for our review involves comparing actual retail sales for a given year to energy sales forecasts made three, four, and five years prior. For example, the actual 2020 retail energy sales were compared to the forecasts made in 2015, 2016, and 2017. These differences, expressed as a percentage error rate, are used to determine each utility's historic forecast accuracy by applying a five-year rolling average. An average error with a negative value indicates an under-forecast, while a positive value represents an over-forecast. An

absolute average error provides an indication of the total magnitude of error, regardless of the tendency to under or over forecast.

For the 2021 Ten-Year Site Plans, determining the accuracy of the five-year rolling average forecasts involves comparing the actual retail energy sales for the period 2016 through 2020 to forecasts made between 2011 and 2017. In the period before the 2007-08 economic recession, electric utilities experienced a higher annual growth rate for retail energy sales than the post-recession period. As most electric utilities and macroeconomic forecasters did not predict the financial crisis, the economic impact and its resulting effect on retail energy sales of Florida’s electric utilities were not included in these projections. Therefore, the use of a metric that compares pre-recession forecasts with pre-recession actual data has a high rate of error.

Table 4 shows that the years prior to 2017 had relatively high forecast errors (the difference between the actual data and the forecasts made five years prior) due to the unexpected impact of the 2007-08 recession and its impact on retail energy sales in Florida. However, the forecast errors have returned to lower levels as utility retail sales forecasts include more post-recession years. This was indicated by the actual sales data provided in the 2017 Ten-Year Site Plans. The forecasting error rates (five-year rolling average and/or absolute average) derived from the 2018 to 2020 TYSP Utilities’ forecasts show continued decreases.

**Table 4: TYSP Utilities - Accuracy of Retail Energy Sales Forecasts (Five-Year Rolling Average)**

Year	Five-Year Analysis Period	Forecast Years Analyzed	Forecast Error (%)	
			Average	Absolute Average
2012	2012 - 2008	2009 - 2003	15.22%	15.22%
2013	2013 - 2009	2010 - 2004	16.27%	16.27%
2014	2014 - 2010	2011 - 2005	14.99%	14.99%
2015	2015 - 2011	2012 - 2006	12.55%	12.55%
2016	2016 - 2012	2013 - 2007	9.19%	9.19%
2017	2017 - 2013	2014 - 2008	6.07%	6.07%
2018	2018 - 2014	2015 - 2009	3.58%	3.58%
2019	2019 - 2015	2016 - 2010	2.26%	2.42%
2020	2020 - 2016	2017 - 2011	1.68%	2.12%

Source: 2003-2021 Ten-Year Site Plans

To verify whether more recent forecasts bear lower error rates, an additional analysis was conducted to determine with more detail the source of high error rates in terms of forecast timing. Table 5 provides the error rates for forecasts made between one to six years prior, along with the three-year average and absolute average error rates for the forecasting period of three- to five-years used in the analysis.

As displayed in Table 5, the utilities’ retail energy sales forecasts show a large positive error during the recession-impacted period of 2009 through 2014. Starting in 2015, the error rates have declined considerably; and, the error rates calculated based on recent years’ Ten-Year Site Plans continue

to show lower forecast error rates, compared to the peak value of the error rates related to 2009-2014 sales forecasts. Additionally, the last three years' two-year ahead forecasts, the last two years' three-year ahead forecasts, and the last year's four-year ahead forecast all bear slightly negative error rates (under-forecasts). The current Ten-Year Site Plans also shows a very small error rate with respect to both average and absolute average three to five year error percentages. However, the one-year ahead forecast error was increased significantly and becomes the highest within the last seven years. This reflects the impact of the unpredicted COVID-19 Pandemic event on the accuracy of the utilities' sales forecast.

**Table 5: TYSP Utilities - Accuracy of Retail Energy Sales Forecasts - Annual Analysis (Analysis of Annual and Three-Year Average of Three- to Five- Prior Years)**

Year	Annual Forecast Error Rate (%)						3-5 Year Error (%)	
	Years Prior						Average	Absolute Average
	6	5	4	3	2	1		
2009	12.05%	12.25%	14.58%	14.01%	12.79%	10.27%	13.61%	13.61%
2010	13.03%	15.68%	14.99%	13.81%	10.65%	-0.65%	14.83%	14.83%
2011	21.67%	20.91%	20.22%	17.14%	3.89%	0.18%	19.42%	19.42%
2012	26.43%	26.12%	23.16%	8.58%	4.01%	3.81%	19.29%	19.29%
2013	28.71%	26.42%	10.11%	6.09%	5.69%	3.08%	14.21%	14.21%
2014	27.28%	9.80%	6.10%	5.73%	2.84%	2.21%	7.21%	7.21%
2015	7.29%	3.63%	3.23%	1.02%	0.00%	-1.17%	2.63%	2.63%
2016	4.33%	4.38%	2.28%	1.25%	0.20%	-0.97%	2.64%	2.64%
2017	6.99%	4.93%	3.59%	2.53%	1.57%	-0.07%	3.68%	3.68%
2018	4.28%	2.76%	1.76%	0.75%	-1.13%	-1.08%	1.76%	1.76%
2019	2.95%	2.04%	0.92%	-1.23%	-1.25%	-1.87%	0.58%	1.40%
2020	2.44%	1.27%	-0.97%	-1.07%	-1.91%	2.73%	-0.25%	1.10%

Source: 2003-2021 Ten-Year Site Plans

Barring any unforeseen economic crises, atypical weather patterns, or global health issues, average forecasted energy sales error rates in the next few years are likely to be more reflective of the error rates shown for 2015 through 2020 in Table 5 than those significantly higher error rates that were shown in earlier years associated with the 2007-08 recession. However, the COVID-19 Pandemic has inflicted significant damage to the US economy, and there remains uncertainty as to when the economic impacts of the COVID-19 Pandemic will end. As a result, the actual retail energy sales could differ from what Florida utilities projected in 2020 and prior years. Consequently, the average forecasted energy sales error rates in the next few years may deviate from the lower levels recently recorded. It is important to recognize that the dynamic nature of the economy, the weather, and now even global health issues such as COVID-19 present a degree of uncertainty for Florida utilities' load forecasts, ultimately impacting the accuracy of energy sales forecasts.

## Renewable Generation

---

Pursuant to Section 366.91, F.S., it is in the public interest to promote the development of renewable energy resources in Florida. Section 366.91(2)(d), F.S., defines renewable energy in part, as follows:

“Renewable energy” means electrical energy produced from a method that uses one or more of the following fuels or energy sources: hydrogen produced from sources other than fossil fuels, biomass, solar energy, geothermal energy, wind energy, ocean energy, and hydroelectric power.

Although not considered a traditional renewable resource, some industrial plants take advantage of waste heat, produced in production processes, to also provide electrical power via cogeneration. Phosphate fertilizer plants, which produce large amounts of heat in the manufacturing of phosphate from the input stocks of sulfuric acid, are a notable example of this type of renewable resource. The Section 366.91(2)(d), F.S., definition also includes the following language which recognizes the aforementioned cogeneration process:

The term [Renewable Energy] includes the alternative energy resource, waste heat, from sulfuric acid manufacturing operations and electrical energy produced using pipeline-quality synthetic gas produced from waste petroleum coke with carbon capture and sequestration.

### **Existing Renewable Resources**

Currently, renewable energy facilities provide approximately 6,156 MW of firm and non-firm generation capacity, which represents 9.8 percent of Florida’s overall generation capacity of 63,031 MW in 2020. Table 6 summarizes the contribution by renewable type of Florida’s existing renewable energy sources.

---

**Table 6: State of Florida - Existing Renewable Resources**

<b>Renewable Type</b>	<b>MW</b>	<b>% Total</b>
Solar	4,633	75.3%
Municipal Solid Waste	504	8.2%
Biomass	380	6.2%
Waste Heat	276	4.5%
Wind	272	4.4%
Hydroelectric	51	0.8%
Landfill Gas	41	0.7%
<b>Renewable Total</b>	<b>6,156</b>	<b>100.00%</b>

Source: FRCC 2021 Regional Load and Resource Plan & TYSP Utilities’ Data Responses

---

Of the total 6,156 MW of renewable generation, approximately 2,322 MW are considered firm, based on either operational characteristics or contractual agreement. Firm renewable generation can be relied on to serve customers and can contribute toward the deferral of new fossil fuel power plants. Solar generation contributes approximately 1,840 MW to this total, based upon the

coincidence of solar generation and summer peak demand. Changes in timing of peak demand may influence the firm contributions of renewable resources such as solar and wind.

The remaining renewable generation can generate energy on an as-available basis or for internal use (self-service). As-available energy is considered non-firm, and cannot be counted on for reliability purposes; however, it can contribute to the avoidance of burning fossil fuels in existing generators. Self-service generation reduces demand on Florida's utilities.

### ***Non-Utility Renewable Generation***

Approximately 29 percent of Florida's existing renewable generation capacity comes from non-utility generators, of which municipal solid waste and solar facilities make up the majority. In 1978, the US Congress enacted the Public Utility Regulatory Policies Act (PURPA). PURPA requires utilities to purchase electricity from cogeneration facilities and renewable energy power plants with a capacity no greater than 80 MW (collectively referred to as Qualifying Facilities or QFs). PURPA required utilities to buy electricity from QFs at the utility's full avoided cost. These costs are defined in Section 366.051, F.S., which provides in part that:

A utility's "full avoided costs" are the incremental costs to the utility of the electric energy or capacity, or both, which, but for the purchase from cogenerators or small power producers, such utility would generate itself or purchase from another source.

If renewable energy generator can meet certain deliverability requirements, its capacity and energy output can be paid for under a firm contract. Rule 25-17.250, F.A.C., requires each IOU to establish a standard offer contract with timing and rate of payments based on each fossil-fueled generating unit type identified in the utility's Ten-Year Site Plan. In order to promote renewable energy generation, the Commission requires the IOUs to offer multiple options for capacity payments, including the options to receive early (prior to the in-service date of the avoided-unit) or levelized payments. The different payment options allow renewable energy providers the option to select the payment option that best fits its financing requirements, and provides a basis from which negotiated contracts can be developed.

As previously discussed, large amounts of renewable energy is generated on an as-available basis. As-available energy is energy produced and sold by a renewable energy generator on an hour-by-hour basis for which contractual commitments as to the quantity and time of delivery are not required. As-available energy is purchased at a rate equal to the utility's hourly incremental system fuel cost, which reflects the highest fuel cost of generation each hour.

### ***Customer-Owned Renewable Generation***

With respect to customer-owned renewable generation, Rule 25-6.065, F.A.C., requires the IOUs to offer net metering for all types of renewable generation up to 2 MW in capacity and a standard interconnection agreement with an expedited interconnection process. Net metering allows a customer with renewable generation capability, to offset their energy usage. In 2008, the effective year of Rule 25-6.065, F.A.C., customer-owned renewable generation accounted for 3 MW of renewable capacity. As of the end of 2020, approximately 835 MW of renewable capacity from over 90,500 systems has been installed statewide. Table 7 summarizes the growth of customer-



owned renewable generation interconnections. Almost all installations are solar, with non-solar generation accounting for only 34 installations and 7.1 MW of installed capacity. The renewable generators in this category include wind turbines and anaerobic digesters.

**Table 7: State of Florida - Customer-Owned Renewable Growth**

Year	2013	2014	2015	2016	2017	2018	2019	2020
<b>Number of Installations</b>	6,697	8,581	11,626	15,994	24,166	37,862	59,508	90,552
<b>Installed Capacity (MW)</b>	63.04	79.8	107.5	141	205	317	514	835

Source: Annual Utility Reports

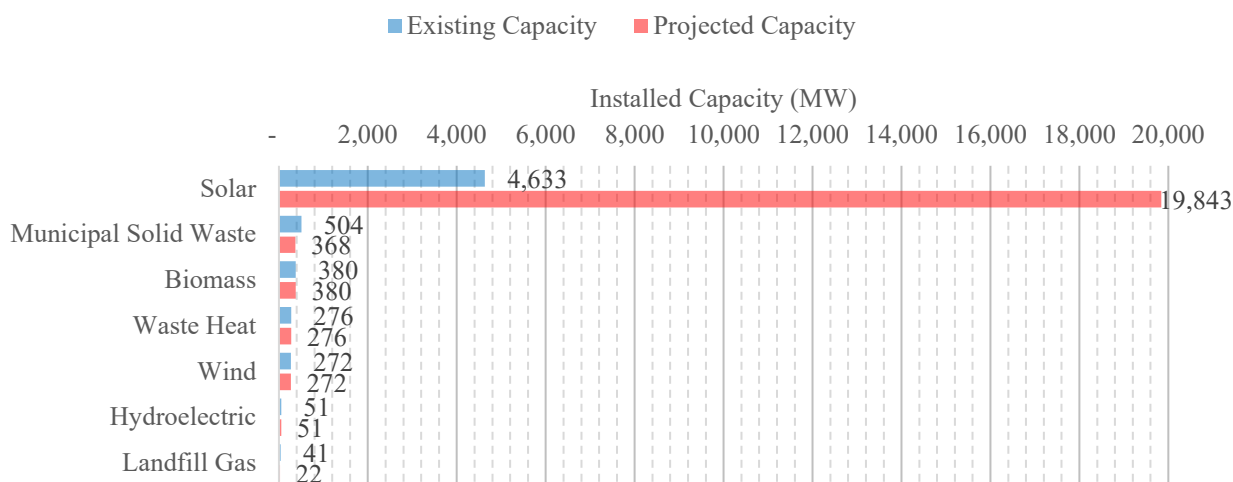
### Utility-Owned Renewable Generation

Utility-owned renewable generation also contributes to the state’s total renewable capacity. The majority of this generation is from solar facilities. Due to the intermittent nature of solar resources, capacity from these facilities has previously been considered non-firm for planning purposes. However, several utilities are attributing firm capacity contributions to their solar installations based on the coincidence of solar generation and summer peak demand. Of the approximately 3,382 MW of existing utility-owned solar capacity, approximately 1,735 MW, or about 51 percent, is considered firm.

### Planned Renewable Resources

Florida’s total renewable resources are expected to increase by an estimated 15,055 MW over the 10-year planning period, a significant increase from last year’s estimated 13,212 MW projection. Figure 11 summarizes the existing and projected renewable capacity by generation type. Solar generation is projected to have the greatest increase over the planning horizon.

**Figure 11: State of Florida - Current and Projected Renewable Resources**

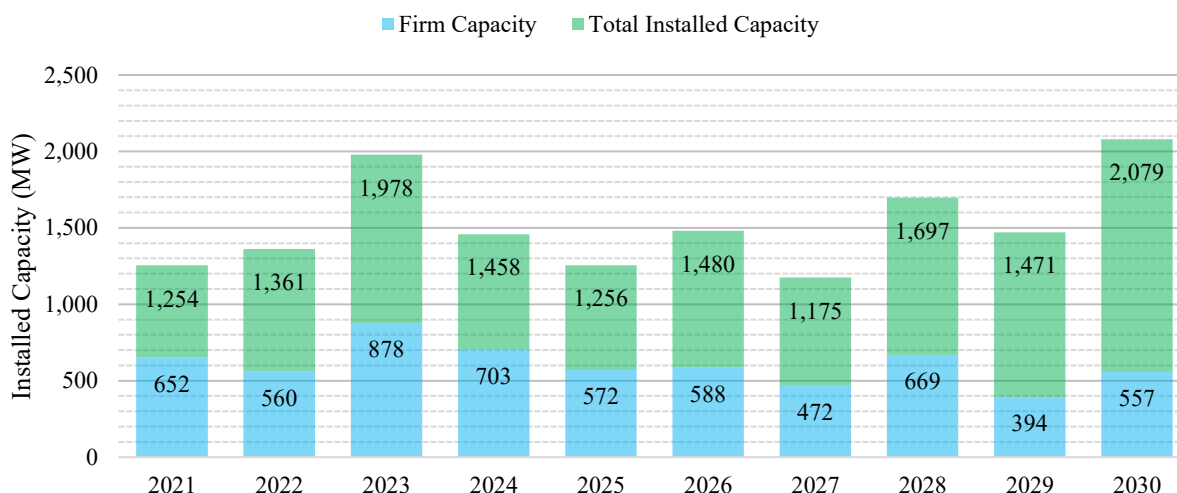


Source: FRCC 2021 Regional Load and Resource Plan & TYSP Utilities’ Data Responses

Of the 15,055 MW projected net increase in renewable capacity, firm resources contribute 6,017 MW, or about 40 percent, of the total. This net increase value takes into account that for some existing renewable facilities contracts for firm capacity are projected to expire within the 10-year planning horizon. If new contracts are signed in the future to replace those that expire, these resources will once again be included in the state’s capacity mix to serve future demand. If these contracts are not extended, the renewable facilities could still deliver energy on an as-available basis.

As noted above, solar generation is anticipated to increase significantly over the 10-year period, with a net total of 15,209 MW to be installed. This consists of 12,471 MW of utility-owned solar and 2,738 MW of contracted solar. The firm contribution of solar varies by utility, with some having a set percentage value for all projects over the planning period, and others having a declining value as projects are added. Figure 12 provides an overview of the additional solar capacity generation planned within the next 10 years, as well as the amount considered firm for summer reserve margin planning.

**Figure 12: TYSP Utilities - Planned Solar Installations**



Source: FRCC 2021 Regional Load and Resource Plan & TYSP Utilities’ Data Responses

### **Energy Storage Outlook**

In addition to a number of electric grid related applications, emerging energy storage technologies have the potential to considerably increase not only the firm capacity contributions from solar PV installations, but their overall functionality as well. Energy storage technologies currently being researched include pumped hydropower, flywheels, compressed air, thermal storage, and battery storage. Of these technologies, Lithium ion (Li-ion) battery storage is being extensively researched due to its declining costs, operational characteristics, scalability, and siting flexibility.

As part of its 2016 Settlement, FPL has deployed approximately 40 MW of non-firm capacity through its Battery Storage Pilot Program and has approximately an additional 10 MW to build in

2021.<sup>7</sup> FPL's 2021 TYSP includes a total of 1,169 MW of solar charged battery storage additions over the next 10 years. Approximately 409 MW of this capacity is expected to be placed into service late in 2021 and will be located in Manatee County. An additional 60 MW will be divided into two 30 MW storage facilities, to be installed at two different locations, also late in 2021. FPL is projecting an additional 700 MW of unsited solar charged battery storage facilities to be added by 2030; 400 MW are projected to be located in the current FPL service area, while the remaining 300 MW are projected to be sited in the current Gulf territory.

DEF is expanding its battery storage with a 50 MW, non-firm capacity, Battery Storage Pilot Program as part of its 2017 Settlement.<sup>8</sup> The program includes six solar charged battery energy storage systems that are expected to be placed into service in 2021. DEF stated these facilities will enhance grid operations, increase efficiencies, improve overall reliability, and provide backup generation during outages. DEF will use the data gathered from the operation of these systems to evaluate future opportunities with battery storage.

TECO installed a 12.6 MW Li-Ion storage system at its Big Bend Solar site in Hillsborough County in 2019. This facility is interconnected with the solar array and is expected to add 5.6 MW of firm capacity. Over the next 10 years, TECO expects to deploy approximately 300 MW of energy storage systems to meet system reliability needs, maximize solar energy production, and to avoid transmission and distribution investments.

---

<sup>7</sup> Order No. PSC-16-0560-AS-EI, issued December 15, 2016, in Docket No. 20160021-EI, *In re: Petition for rate increase by Florida Power & Light Company*.

<sup>8</sup> Order No. PSC-2017-0451-AS-EU, issued November 20, 2017, in Docket No. 20170183-EI, *In re: Application for limited proceeding to approve 2017 second revised and restated settlement agreement, including certain rate adjustments, by Duke Energy Florida, LLC*.

## Traditional Generation

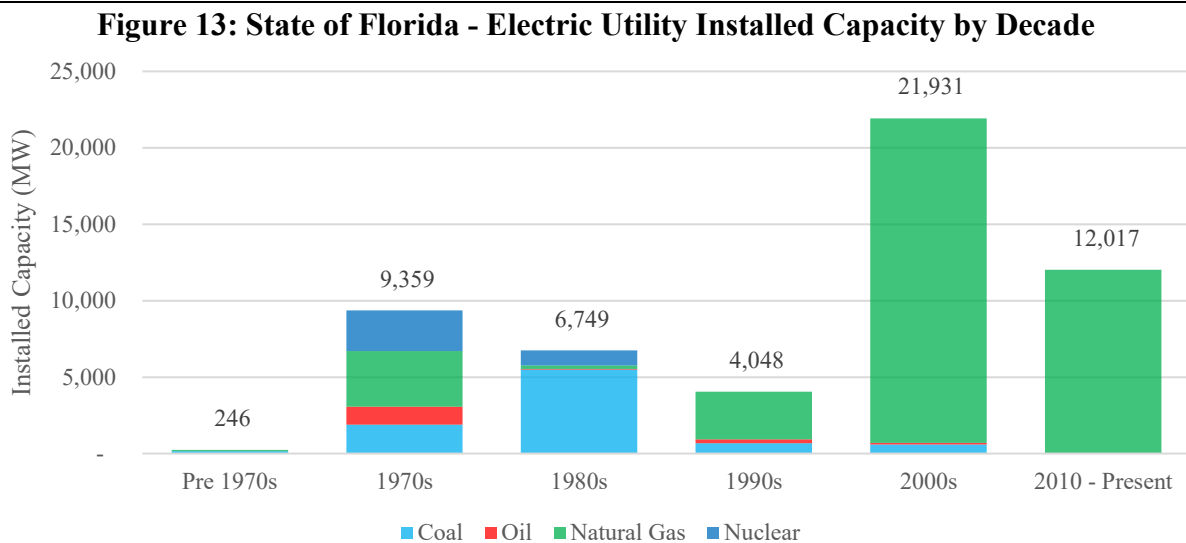
---

While renewable generation increases its contribution to the state’s generating capacity, a majority of generation is projected to come from traditional sources, such as fossil-fueled steam and combustion turbine generators that have been added to Florida’s electric grid over the last several decades. Due to forecasted increases in peak demand, further traditional resources are anticipated over the planning period.

Florida’s electric utilities have historically relied upon several different fuel types to serve customer load. Previous to the oil embargo, Florida used oil-fired generation as its primary source of electricity until the increase in oil prices made this undesirable. Since that time, Florida’s electric utilities have sought a variety of other fuel sources to diversify the state’s generation fleet and more reliably and affordably serve customers. Numerous factors, including swings in fuel prices, availability, environmental concerns, and other factors have resulted in a variety of fuels powering Florida’s electric grid. Solid fuels, such as coal and nuclear, increased during the shift away from oil-fired generation, and more recently natural gas has emerged as the dominant fuel type in Florida.

### Existing Generation

Florida’s generating fleet includes incremental new additions to a historic base fleet, with units retiring as they become uneconomical to operate or maintain. Currently, Florida’s existing capacity ranges greatly in age and fuel type, and legacy investments continue. The weighted average age of Florida’s generating units is 23 years. While the original commercial in-service date may be in excess of 50 years for some units, they are constantly maintained as necessary in order to ensure safe and reliable operation, including uprates from existing capacity, which may have been added after the original in-service date. Figure 13 illustrates the decade in which current operating generating capacity was originally added to the grid, with the largest additions occurring in the 2000s.



Source: FRCC 2021 Regional Load and Resource Plan

---

The existing generating fleet will be impacted by several events over the planning period. New and proposed environmental regulations may require changes in unit dispatch, fuel switching, or installation of pollution control equipment which may reduce net capacity. Modernizations will allow more efficient resources to replace older generation, while potentially reusing power plant assets such as transmission and other facilities, switching to more economic fuel types, or uprates at existing facilities to improve power output. Lastly, retirements of units which can no longer be economically operated and maintained or meet environmental requirements will reduce the existing generation.

### ***Impact of EPA Rules***

In addition to maintaining a fuel efficient and diverse fleet, Florida's utilities must also comply with environmental requirements that impose incremental costs or operational constraints. During the planning period, the six EPA rules identified below were anticipated to affect electric generation in Florida. The first five rules are currently under EPA review pursuant to Executive Order 13990.<sup>9</sup> Future developments will be addressed in a subsequent Ten-Year Site Plan review.

- **Carbon Pollution Emissions Standards for New, Modified and Reconstructed Secondary Sources: Electric Utility Generating Units -** Sets carbon dioxide emissions limits for new, modified or reconstructed electric generators. These limits vary by type of fuel (coal or natural gas). New units are those built after January 18, 2014. Units that undergo modifications or reconstructions after June 18, 2014, that materially alter their air emissions are subject to the specified limits. This rule is currently under appeal. On August 21, 2018, as part of its proposed Affordable Clean Energy Rule, the EPA proposed updates to the New Source Review permitting program that may impact utility decisions regarding power plant modifications and reconstruction. However, no final regulatory actions have been taken. Future developments will be addressed in a subsequent Ten-Year Site Plan review.
- **Carbon Pollution Emission Guideline for Existing Electric Generating Units:** On July 8, 2019, EPA finalized the ACE rule. ACE establishes carbon emission guidelines such that each state must perform site-specific reviews to determine the applicable standard of performance using the EPA's best system of emission reduction (BSER). The BSER identifies six technologies upgrades as well as operation and maintenance practices directed at improving the heat rate efficiency of coal-fired steam generating units greater than 25 MWs that began construction on or before January 8, 2014. No other type of existing fossil steam utility generators are subject to the requirements of ACE. However, on January 19, 2021, the U.S. Court of Appeals for the District of Columbia Circuit vacated the ACE rule and remanded it to the EPA. As the Court did not expressly reinstate the CPP, the EPA understands the decision as leaving neither of those rules, and thus no CAA section 111(d) regulation, in place with respect to greenhouse gas emissions from electric generating units.
- **Prevention of Significant Deterioration and Nonattachment New Source Review:** On August 1, 2019, the EPA announced a proposed rule that would revise certain New Source

---

<sup>9</sup> See [Executive Order 13990 Fact Sheet](#).

Review (NSR) applicability regulation to clarify the requirements that apply to new sources, such as electric steam generators, proposing to undertake a physical or operational change (i.e., project) under the NSR preconstruction permitting program. EPA is proposing to clarify that both emission increases and decreases resulting from a given project are to be considered when determining whether the project by itself results in a significant emission increase.

- Mercury and Air Toxics Standards (MATS) - Sets limits for air emissions from existing and new coal- and oil-fired electric generators with a capacity greater than 25 megawatts. Covered emissions include: mercury and other metals, acid gases, and organic air toxics for all generators, as well as particulate matter, sulfur dioxide, and nitrogen oxide from new and modified coal and oil units.
- Cooling Water Intake Structures (CWIS) - Sets impingement standards to reduce harm to aquatic wildlife pinned against cooling water intake structures at electric generating facilities. All electric generators that use state or federal waters for cooling with an intake velocity of at least two million gallons per day must meet impingement standards. Generating units with higher intake velocity may have additional requirements to reduce the damage to aquatic wildlife due to entrapment in the cooling water system.
- Coal Combustion Residuals (CCR) - Requires liners and ground monitoring to be installed on landfills in which coal ash is deposited. On July 29, 2020, the EPA issued for publication in the Federal Register, a final rule that will require among other things that unlined impoundments and CCR units that failed to meet ground water quality regulations must cease receipt of waste streams by April 11, 2021.

Each utility will need to evaluate whether these additional costs or operational limitations allow the continued economic operation of each affected unit, and whether installation of emissions control equipment, fuel switching, or retirement is the proper course of action.

### ***Modernization and Efficiency Improvements***

Modernizations involve removing existing generator units that may no longer be economical to operate, such as oil-fired steam units, and reusing the power plant site's transmission or fuel handling facilities with a new set of generating units. The modernization of existing plant sites, allows for significant improvement in both performance and emissions, typically at a lower price than new construction at a greenfield site. Not all sites are candidates for modernization due to site layout and other concerns, and to minimize rate impacts, modernization of existing units should be considered along with new construction at greenfield sites.

The Commission has previously granted determinations of need for several conversions of oil-fired steam units to natural gas-fired combined cycle units, including FPL's Cape Canaveral, Riviera, and Port Everglades power plants. DEF has also conducted a conversion of its Bartow power plant, but this did not require a determination of need from the Commission.

Utilities also plan several efficiency improvements to existing generating units. For example, the conversion of existing simple cycle combustion turbines into a combined cycle unit, which

captures the waste heat and uses it to generate additional electricity using a steam turbine. TECO is modernizing its Big Bend Power Station through the conversion of Big Bend Unit 1, along with two planned combustion turbines, into a 2x1 combined cycle unit by 2023. Per the Florida Department of Environmental Protection, this conversion does not require a determination of need by the Commission. FPL plans on upgrading its existing combined cycle fleet by improving the performance of the integrated combustion turbines at many of its current and planned power plants.

### **Planned Retirements**

Power plant retirements occur when the electric utility is unable to economically operate or maintain a generating unit due to environmental, economic, or technical concerns. Table 8 lists the 5,583 MW of existing generation that is scheduled to be retired during the planning period. Within the next 10 years, 12 natural gas units totaling 2,624 MW, 7 coal units totaling 2,425 MW, and 12 oil units totaling 534 MW are scheduled to retire.

**Table 8: State of Florida - Electric Generating Units to be Retired**

Year	Utility Name	Plant Name & Unit Number	Unit Type	Net Capacity (MW)
				Summer
2021	FPL/GPC	Manatee 1 & 2	NG – ST	1,618
	FPL/GPC/JEA	Scherer 4	BIT – ST	832
	TECO	Big Bend 2	NG – ST	446
	LAK	McIntosh Unit No. 3	BIT-ST	205
<b>2021 Subtotal</b>				<b>3,101</b>
2022	GRU	Deerhaven FS01	NG – ST	75
	SEC	Seminole Generating Station 1 or 2*	BIT – ST	736
<b>2022 Subtotal</b>				<b>811</b>
2023	TECO	Big Bend 3	NG – ST	395
<b>2023 Subtotal</b>				<b>395</b>
2024	FPL/GPC	Crist 4	BIT – ST	75
	FPL/GPC	Daniel 1 & 2	BIT – ST	502
<b>2024 Subtotal</b>				<b>577</b>
2025	DEF	Bayboro P1 – P4	DFO – CT	171
	FPL/GPC	Pea Ridge 1 - 3	NG – CT	12
<b>2025 Subtotal</b>				<b>183</b>
2026	GRU	Deerhaven GT01 & GT02	NG – CT	35
	FPL/GPC	Crist 5	BIT – ST	75
<b>2026 Subtotal</b>				<b>110</b>
2027	DEF	Debary P2 – P6	DFO – CT	249
	DEF	University of Florida P1	NG – CT	43
	DEF	Bartow P1 & P3	DFO – CT	82
	FPL/GPC	Lansing Smith A	DFO – CT	32
<b>2027 Subtotal</b>				<b>406</b>
<b>Total Retirements</b>				<b>5,583</b>

\* SEC has not determined whether to retire SGS 1 (626 MW) or SGS 2 (634 MW) at this time.

Source: 2021 Ten-Year Site Plans

### **Reliability Requirements**

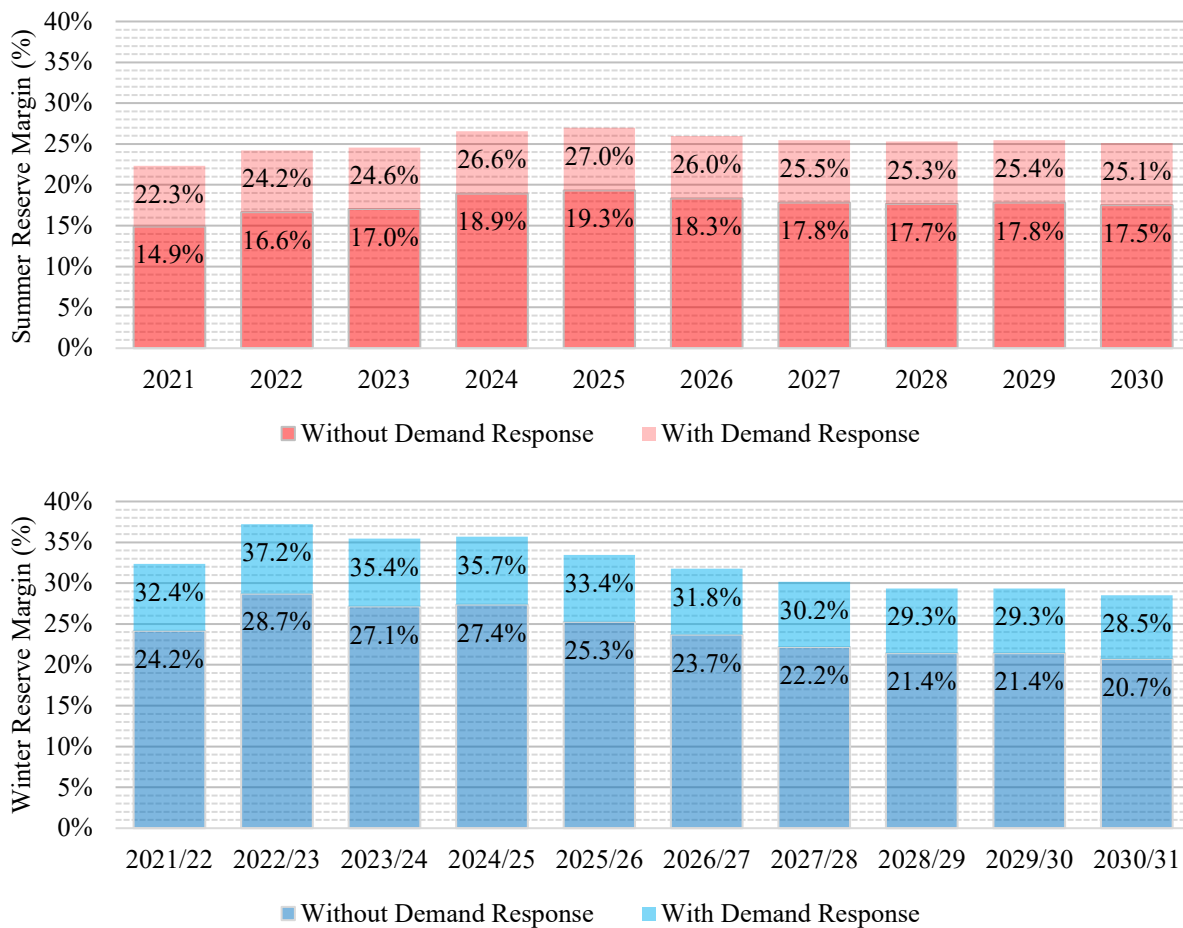
Florida’s electric utilities are expected to have enough generating assets available at the time of peak demand to meet forecasted customer demand. If utilities only had sufficient generating

capacity to meet forecasted peak demand, then potential instabilities could occur if customer demand exceeds the forecast, or if generating units are unavailable due to maintenance or forced outages. To address these circumstances, utilities are required to maintain additional planned generating capacity above the forecast customer demand, referred to as the reserve margin.

On July 1, 2019, the SERC Reliability Corporation (SERC) became the new Compliance Enforcement Authority for all electric utilities previously registered with the FRCC. Electric utilities within Florida must maintain a minimum reserve margin of 15 percent for planning purposes. Certain utilities have elected to have a higher reserve margin, either on an annual or seasonal basis. The three largest reporting electric utilities, FPL, DEF, and TECO, are party to a stipulation approved by the Commission that utilizes a 20 percent reserve margin for planning.

While Florida’s electric utilities are separately responsible for maintaining an adequate planning reserve margin, a statewide view illustrates the degree to which capacity may be available for purchases during periods of high demand or unit outages. Figure 14 is a projection of the statewide seasonal reserve margin including all proposed power plants.

**Figure 14: State of Florida - Projected Reserve Margin by Season**



Source: FRCC 2021 Regional Load and Resource Plan



## Role of Demand Response in Reserve Margin

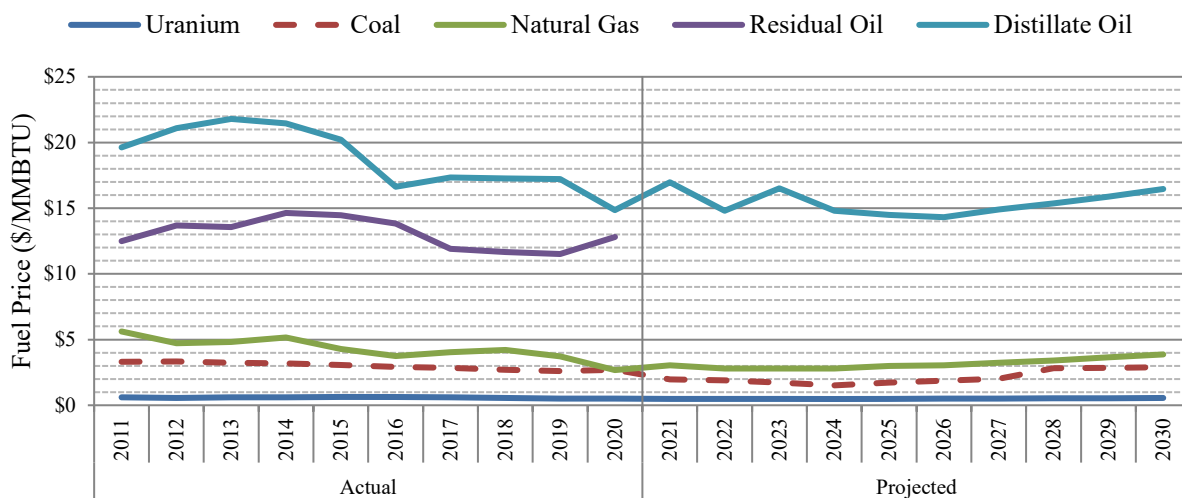
The Commission also considers the planning reserve margin without demand response. As illustrated above in Figure 14, the statewide seasonal reserve margin exceeds the FRCC’s required 15 percent planning reserve margin without activation of demand response. Demand response activation increases the reserve margin in summer by 7.6 percent on average.

Demand response participants receive discounted rates or credits regardless of activation, with these costs recovered from all ratepayers. Because of the voluntary nature of demand response, a concern exists that a heavy reliance upon this resource would make participants eschew the discounted rates or credits for firm service. For interruptible customers, participants must provide notice that they intend to leave the demand response program, with a notice period of three or more years being typical. For load management participants, usually residential or small commercial customers, no advanced notice is typically required to leave. Historically, demand response participants have rarely been called upon during the peak hour, but are more frequently called upon during off-peak periods due to unusual weather conditions.

## Fuel Price Forecast

Fuel price is an important economic factor affecting the dispatch of the existing generating fleet and the selection of new generating units. In general, the capital cost of a fuel-based power plant is inversely proportional to the cost of the fuel used to generate electricity from that unit. The major fuels consumed by Florida’s electric utilities are natural gas, coal, and uranium. Distillate oil and residual oil also factor into Florida utilities’ fuel mix, albeit minimally when compared to historical levels. Distillate oil remains the most expensive fuel, which explains why it is used for backup and peaking purposes only, while residual oil is being phased out, with none of the TYSP Utilities forecasting the price of residual oil after 2021. Figure 15 illustrates the weighted average fuel price history and forecasts for the reporting electric utilities.

**Figure 15: TYSP Utilities - Average Fuel Price of Reporting Electric Utilities**



Source: Utilities Responses to FPSC Staff’s Data Requests

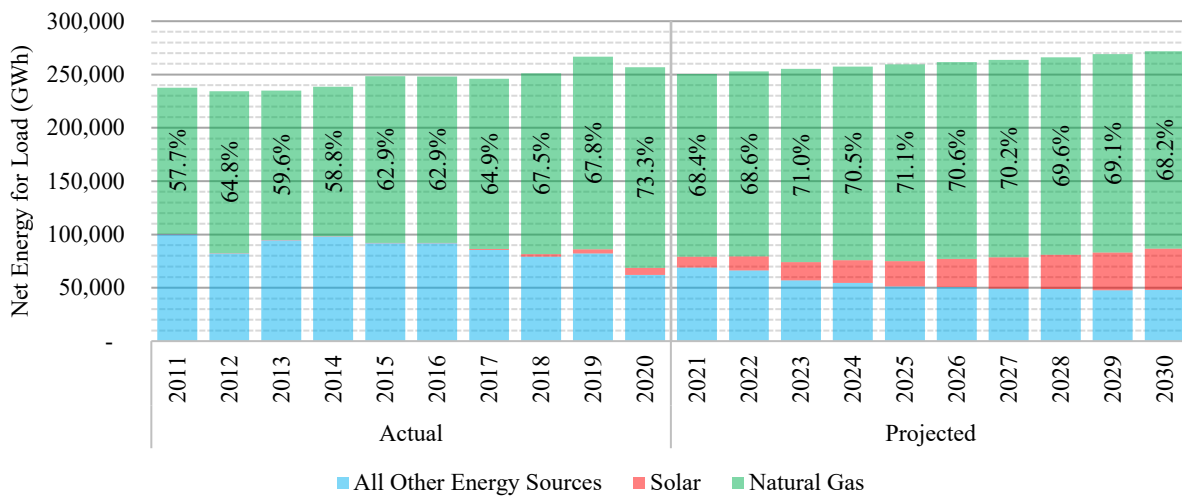
As shown in Figure 15, the price of natural gas continued to decline from 2012 until 2020. Even though current forecasts project the price of natural gas to remain relatively stable over the long term, there remains some degree of natural gas price volatility over the short and medium term. For instance, natural gas price volatility was reflected in the 2021 requests for fuel factor mid-course corrections (increases in customer fuel charges) filed by TECO and DEF, and approved by the PSC on August 3, 2021.<sup>10</sup>

The price of coal has been stable from 2012 through 2020. However, forecasts show a slight decrease through 2024 at which time coal prices are forecasted to nearly double by 2030. It should be noted that Florida utilities’ reliance on coal for electric generation is projected to decrease substantially over the next 10 years.

### Fuel Diversity

Natural gas has risen to become the dominant fuel in Florida and since 2011 has generated more net energy for load than all other fuels combined. As Figure 16 illustrates, natural gas was the source of approximately 73 percent of electric energy consumed in Florida in 2020. Natural gas electric generation, as a percent of net energy for load, is anticipated to decline slightly throughout the remainder of the planning period.

**Figure 16: State of Florida - Natural Gas Generation**



Source: FRCC 2012-2021 Regional Load and Resource Plan

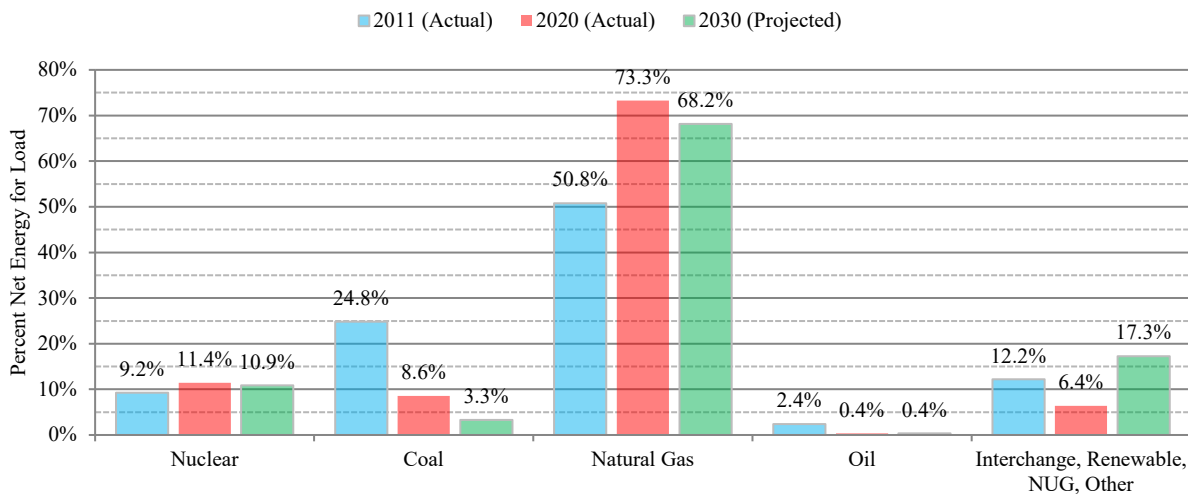
Because a balanced fuel supply can enhance system reliability and mitigate the effects of volatility in fuel price fluctuations, it is important that utilities have a level of flexibility in their generation mix. Maintaining fuel diversity on Florida’s system faces several difficulties. Existing coal units will require additional emissions control equipment leading to reduced output, or retirement if the emissions controls are uneconomic to install or operate. New solid fuel generating units such as

<sup>10</sup> Docket No. 20210001-EI, *In re: Fuel and purchased power cost recovery clause with generating performance incentive factor.*

nuclear and coal have long lead times and high capital costs. New coal units face challenges relating to new environmental compliance requirements, making it unlikely they could be permitted without novel emissions control technology.

Figure 17 shows Florida’s historic and forecast percent net energy for load by fuel type for the actual years 2011 and 2020, and forecast year 2030. Oil has declined significantly, with its uses reduced to start-up fuel, peaking, and back-up for dual-fuel units in case of a fuel outage. Nuclear generation is expected to remain steady throughout the planning period. Coal generation is expected to continue its downward trend well into the planning period. Natural gas has been the primary fuel used to meet the growth of energy consumption, and this trend is anticipated to continue throughout the planning period.

**Figure 17: State of Florida - Historic and Forecast Generation by Fuel Type**



Source: FRCC 2012-2021 Regional Load and Resource Plan

Based on 2018 Energy Information Administration (EIA) data, Florida ranks fourth in terms of the total volume of natural gas consumed compared to the rest of the United States.<sup>11</sup> For volume of natural gas consumed for electric generation, Florida ranks second, behind Texas. Natural gas is not used as a heating fuel in most of Florida’s homes and businesses, which rely instead upon electricity that is increasingly being generated by natural gas. As Florida has very little natural gas production and limited gas storage capacity, the state is reliant upon out-of-state production and storage to satisfy the growing electric demands of the state.

### ***New Generation Planned***

Current demand and energy forecasts continue to indicate that in spite of increased levels of conservation, energy efficiency, renewable generation, and existing traditional generation resources, the need for additional generating capacity still exists. While reductions in demand have been significant, the total demand for electricity is expected to increase, making the addition of

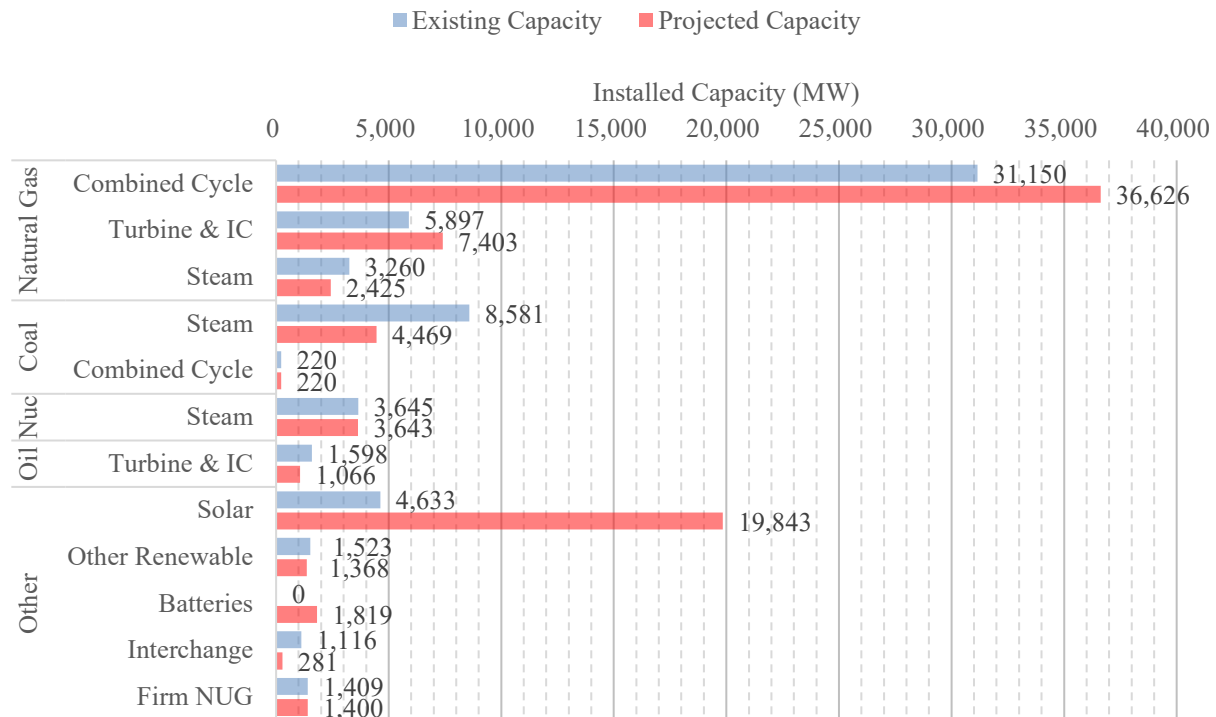
<sup>11</sup> U.S. Energy Information Administration natural gas consumption by end-use annual report.

traditional generating units necessary to satisfy reliability requirements and provide sufficient electric energy to Florida’s consumers. Because any capacity addition has certain economic impacts based on the capital required for the project, and due to increasing environmental concerns relating to solid fuel-fired generating units, Florida’s utilities must carefully weigh the factors involved in selecting a supply-side resource for future traditional generation projects.

In addition to traditional economic analyses, utilities also consider several strategic factors, such as fuel availability, generation mix, and environmental compliance prior to selecting a new supply-side resource. Limited supplies, access to water or rail delivery points, pipeline capacity, water supply and consumption, land area limitations, cost of environmental controls, and fluctuating fuel costs are all important considerations to the utilities’ IRP process.

Figure 18 illustrates the present and future aggregate capacity mix. The capacity values in Figure 18 incorporate all proposed additions, changes, and retirements contained in the reporting utilities’ 2021 Ten-Year Site Plans and the FRCC’s 2021 Regional Load and Resource Plan. Unlike previous years, capacity contributions from non-utility generators have now been included in their respective fuel and generation technology categories, as opposed to reported separately, to better represent the aggregate existing and projected capacity in Florida.

**Figure 18: State of Florida - Current and Projected Installed Capacity by Fuel**



Source: FRCC 2021 Regional Load and Resource Plan & TYSP Utilities’ Data Responses

## New Power Plants by Fuel Type

### Nuclear

Nuclear capacity, while an alternative to natural gas-fired generation, is capital-intensive and requires a long lead time to construct. In April of 2018, FPL received Combined Operating Licenses (COL) from the Nuclear Regulatory Commission (NRC) for two future nuclear units, Turkey Point Units 6 & 7. These units are planned to be sited at FPL’s Turkey Point site, the location of two existing nuclear generating units. The earliest possible in service date for these two units are outside the scope of the Ten-Year Site Plan. FPL has two nuclear units at Turkey Point that have minimal uprates planned during the projection period. FPL had previously uprated its existing four nuclear generating units, with the last uprate completed in early 2013.

### Natural Gas

Several new natural gas-fired combustion turbines, internal combustion units, and combined cycle units are planned over the next 10 years. Combustion turbines that run only in simple cycle mode and internal combustion units, taken together, represent the third most abundant type of generating capacity. As combustion turbines are not a form of steam generation, unless part of a combined cycle unit, they do not require siting under the Power Plant Siting Act. Table 9 summarizes the approximately 5,454 MW of additional capacity from new natural gas-fired generating units proposed by the 2021 Ten-Year Site Plan utilities.

Several utilities are exploring the use of natural gas internal combustion units (also called reciprocating engines) as a means of fast ramping peaking capacity. Such additions afford improved environmental and reliability benefits, enhanced operational flexibility, and improvements to system resiliency.

**Table 9: TYSP Utilities - Planned Natural Gas Units**

In-Service Year	Utility Name	Plant Name & Unit Number	Net Capacity (MW)	Notes
<b>Previously Approved New Units</b>				
2022	FPL	Dania Beach Energy Center	1,163	Docket No. 20170225-EI
	SEC	Seminole CC Facility	1,099	Docket No. 20170266-EI
2025	SEC	Unnamed CC	542	Docket No. 20170266-EI
<b>Subtotal</b>				<b>2,804</b>
<b>New Units Requiring PPSA Approval</b>				
None				
<b>Subtotal</b>				<b>0</b>
<b>New Units Not Requiring PPSA Approval</b>				
2023	TECO	Big Bend CC Conversion	1,055	Includes Big Bend 1 Steam Turbine
2022	FPL	Crist Unit 8	938	4 Combustion Turbines
2024	LAK	Mcintosh IC3-7	100	5 Reciprocating Engines
2024	TECO	Reciprocating Engine	37	2 Reciprocating Engines
2027	DEF	Unsited Combustion Turbine	214	
2029	DEF	Unsited Combustion Turbine	214	
2030	SEC	Unnamed Reciprocating Unit	92	
<b>Subtotal</b>				<b>2,650</b>
<b>Total</b>				<b>5,454</b>

Source: 2021 Ten-Year Site Plans

**Commission’s Authority Over Siting**

Any proposed steam or solar generating unit greater than 75 MW requires a certification under the Electrical Power Plant Siting Act (PPSA), contained in Sections 403.501 through 403.518, F.S. The Commission has been given exclusive jurisdiction to determine the need for new electric power plants through Section 403.519, F.S. Upon receipt of a determination of need, the electric utility would then seek approval from the Florida Department of Environmental Protection, which addresses land use and environmental concerns. Finally, the Governor and Cabinet, sitting as the Siting Board, ultimately must approve or deny the overall certification of a proposed power plant. There are no new units in the 10 year horizon that require certification under the PPSA.

**Transmission**

As generation capacity increases, the transmission system must grow accordingly to maintain the capability of delivering energy to end-users. The Commission has been given broad authority pursuant to Chapter 366, F.S., to require reliability within Florida’s coordinated electric grid and to ensure the planning, development, and maintenance of adequate generation, transmission, and distribution facilities within the state.

The Commission has authority over certain proposed transmission lines under the Electric Transmission Line Siting Act (TLSA), contained in Sections 403.52 through 403.5365, F.S. To require certification under Florida’s TLSA, a proposed transmission line must meet the following criteria: a nominal voltage rating of at least 230 kV, crossing a county line, and a length of at least 15 miles. Proposed lines in an existing corridor are also exempt from TLSA requirements. The Commission determines the reliability need and the proposed starting and end points for lines requiring TLSA certification. The proposed corridor route is subsequently determined by the Florida Department of Environmental Protection during the certification process. Much like the PPSA, the Governor and Cabinet sitting as the Siting Board ultimately must approve or deny the overall certification of a proposed line.

Table 10 lists all proposed transmission lines in the 2021 Ten-Year Site Plans and the FRCC 2021 Regional Load and Resource Plan that require TLSA certification. All planned lines have already received the approval of the Commission, either independently or as part of a PPSA determination of need.

**Table 10: State of Florida - Planned Transmission Lines**

Utility	Transmission Line	Line Length	Nominal Voltage	Date Need Approved	Date TLSA Certified	In-Service Date
		(Miles)	(kV)			
FPL	Levee to Midway	150	500	5/28/1988	4/20/1990	2030
TECO	Thonotosassa to Wheeler	8	230	6/22/2007	8/8/2008	TBD
TECO	Wheeler to Willow Oak	17	230	6/23/2006	8/9/2008	TBD
TECO	Lake Agnes to Gifford	27.5	230	9/26/2007	2/18/2009	TBD

Source: 2021 Ten-Year Site Plans & FRCC 2021 Regional Load and Resource Plan

# Utility Perspectives





## **Florida Power & Light Company (FPL) & Gulf Power Company (GPC)**

FPL and GPC are the largest and smallest generating investor-owned utilities, respectively, and are Florida's first and sixth largest electric utilities. FPL's service territory is within the FRCC region and is primarily in south Florida and along the east coast, while GPC's service territory is within the Florida Panhandle region. NextEra Energy Inc., FPL's parent company acquired GPC through a purchase that closed during the first half of 2019. The companies filed a joint Ten-Year Site Plan that outlined the planning for both companies separately until January 1, 2022, and the completion of an interconnecting transmission line, after which GPC and FPL would merge from an operational perspective, at which point GPC will be operated entirely by FPL. Prior to the final operational merger, GPC will continue to be operated in conjunction with other Southern Company utilities. As such, not all of the energy generated by GPC will be consumed within Florida. As both are investor-owned utilities, the Commission has regulatory authority over all aspects of their operations, including rates, reliability, and safety. Pursuant to Section 186.801(2), F.S., the Commission finds FPL and GPC's joint 2021 Ten-Year Site Plan suitable for planning purposes.

### **Load and Energy Forecasts**

In 2020, FPL had approximately 5,136,995 customers and annual retail energy sales of 113,531 GWh, or approximately 48.8 percent of Florida's annual retail energy sales. FPL's total customers grew 1.5 percent in 2020. The utility noted that the 2020 customer growth is more indicative of normal growth rates when compared to the 2019 customer growth rate (2.0 percent), which was higher due to the acquisition of Vero Beach at the end of 2018. FPL's weather-normalized retail energy sales increased 0.6 percent in 2020. This increase is primarily attributable to the growth in the residential class, and partially offset by declines in the commercial class. Residential energy sales grew due to higher usage and customer growth while commercial energy sales declined due to lower usage, partially offset by customer growth. Figure 19 illustrates FPL's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the past 10 years, FPL's customer base has increased by 12.97 percent, while retail sales have grown by 9.87 percent.

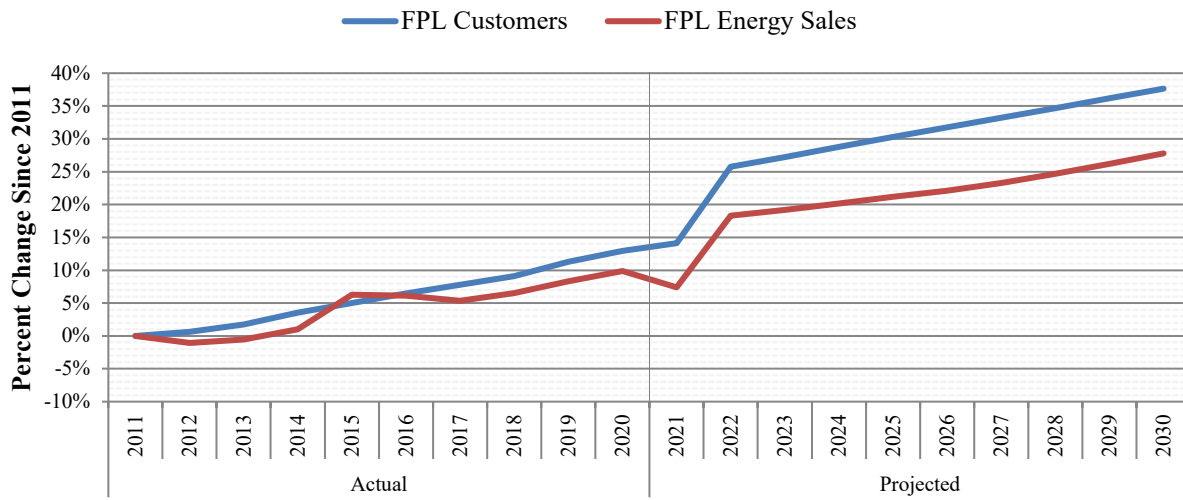
In 2020, GPC had approximately 470,680 customers and annual retail energy sales of 10,635 GWh, or approximately 4.6 percent of Florida's annual retail energy sales. GPC's total customers grew by 1.2 percent in 2020, compared to flat growth in 2019 which was due to the impacts of Hurricane Michael. GPC's weather-normalized retail energy sales decreased by 1.9 percent in 2020 due to lower commercial and industrial energy sales, partially offset by higher residential sales. Figure 19 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales from 2011 to 2022, at which point GPC's growth is integrated into FPL's forecasts to reflect system integration. Over the last 10 years, GPC's customer base has increased by 8.85 percent, while retail sales have decreased by 3.67 percent.

For both FPL and GPC, weather-normalized use per customer for residential and commercial customers was significantly affected by the COVID-19 Pandemic and the shelter-in-place orders that were implemented to mitigate the spread of the virus. The results were an increase in residential usage by 3.8 percent and 1.2 percent for FPL and GPC, respectively, due to people

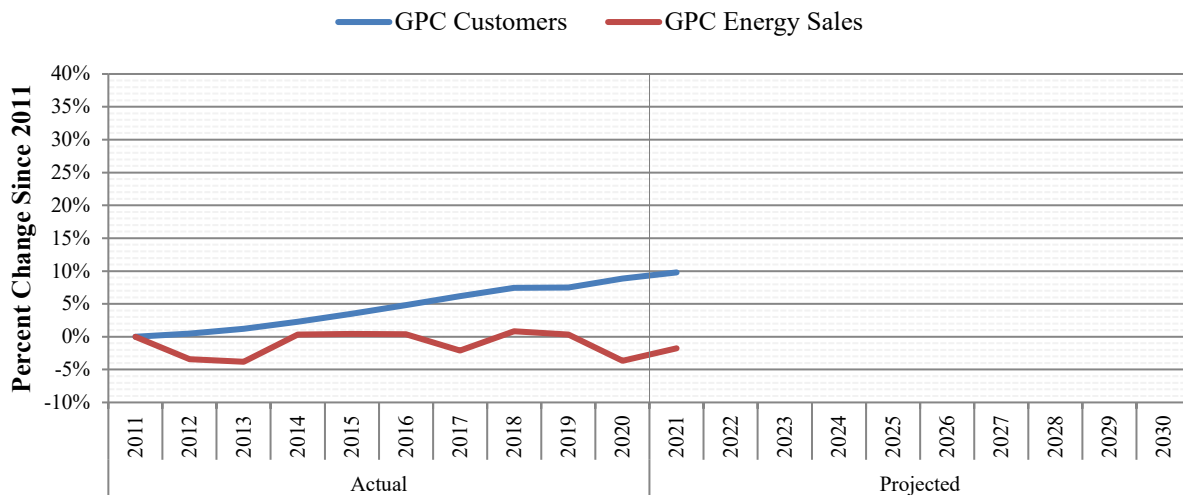
staying at home more. On the other hand, FPL and GPC experienced a decrease in commercial usage of 6.4 percent and 6.8 percent, respectively, due to business shutdowns. FPL’s industrial use per customer increased in 2020 which the utility indicated is not attributable to impacts from the COVID-19 Pandemic. GPC’s weather-normalized industrial per customer usage decreased 5.3 percent in 2020 due to lower usage by a small number of large industrial customers.

In the utilities’ 2021 Ten-Year Site Plan, customers for the combined FPL and Gulf system are forecasted to grow by 1.1 to 1.2 percent per year, with total customer growth being driven primarily by residential customer growth. Retail sales of the FPL and GPC combined system are forecasted to grow by 0.7 to 1.3 percent per year over the forecast horizon. This is driven by growth in residential and commercial class sales attributed to customer growth, partially offset by usage declines related to improvements in electric appliance efficiencies.

**Figure 19: FPL & GPC Growth**  
**FPL**



**GPC**



Source: 2021 Ten-Year Site Plan

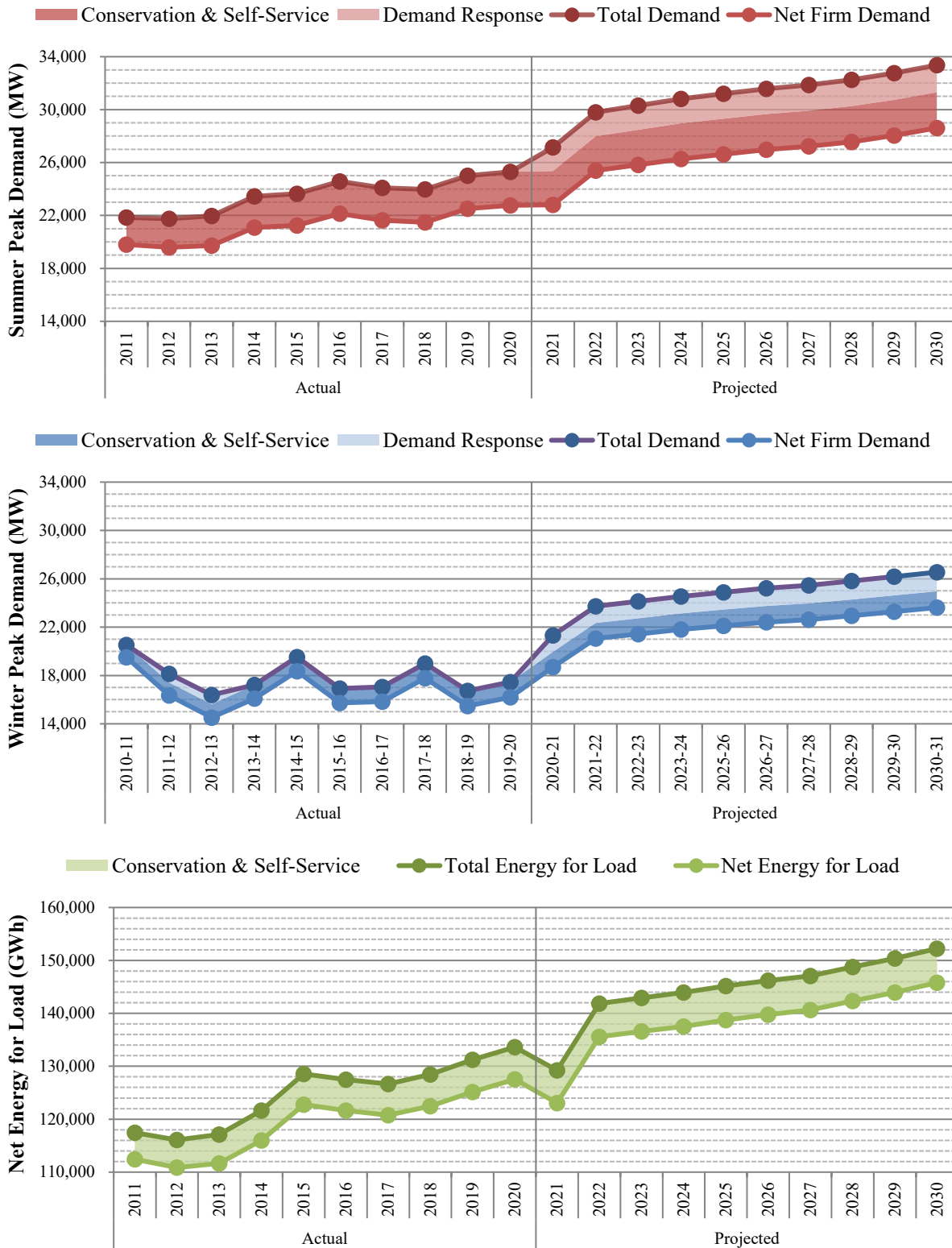
As mentioned earlier, on January 1, 2019, GPC became a subsidiary of NextEra, FPL's parent company. FPL and GPC plan to integrate the two systems into a single electric system, effective January 1, 2022. Consistent with last year's report, the demand and energy forecasts for FPL and GPC continue to be presented separately for the year 2021. For years 2022 through 2030, the demand and energy forecasts for FPL/GPC are presented as a single integrated utility (FPL), as depicted in Figure 20.

The three graphs in Figure 20 show FPL's seasonal peak demand and net energy for load, for the historic years 2011 through 2020 and forecast years 2021 through 2030. These graphs include the impact of demand-side management, and for future years assume that all available demand response resources will be activated during the seasonal peak. FPL expects a spike in all demand and energy forecasts in 2022 due to its planned integration with GPC's system. Historically, demand response has not been activated during the seasonal peak demand, excluding the winter of 2010-11.

The three graphs in Figure 21 show GPC's seasonal peak demand and net energy for load, for the historic years 2011 through 2020 and forecast year 2021. GPC's demand and energy forecasts sharply decline to zero after 2021 due to the utility's planned integration with FPL's system.

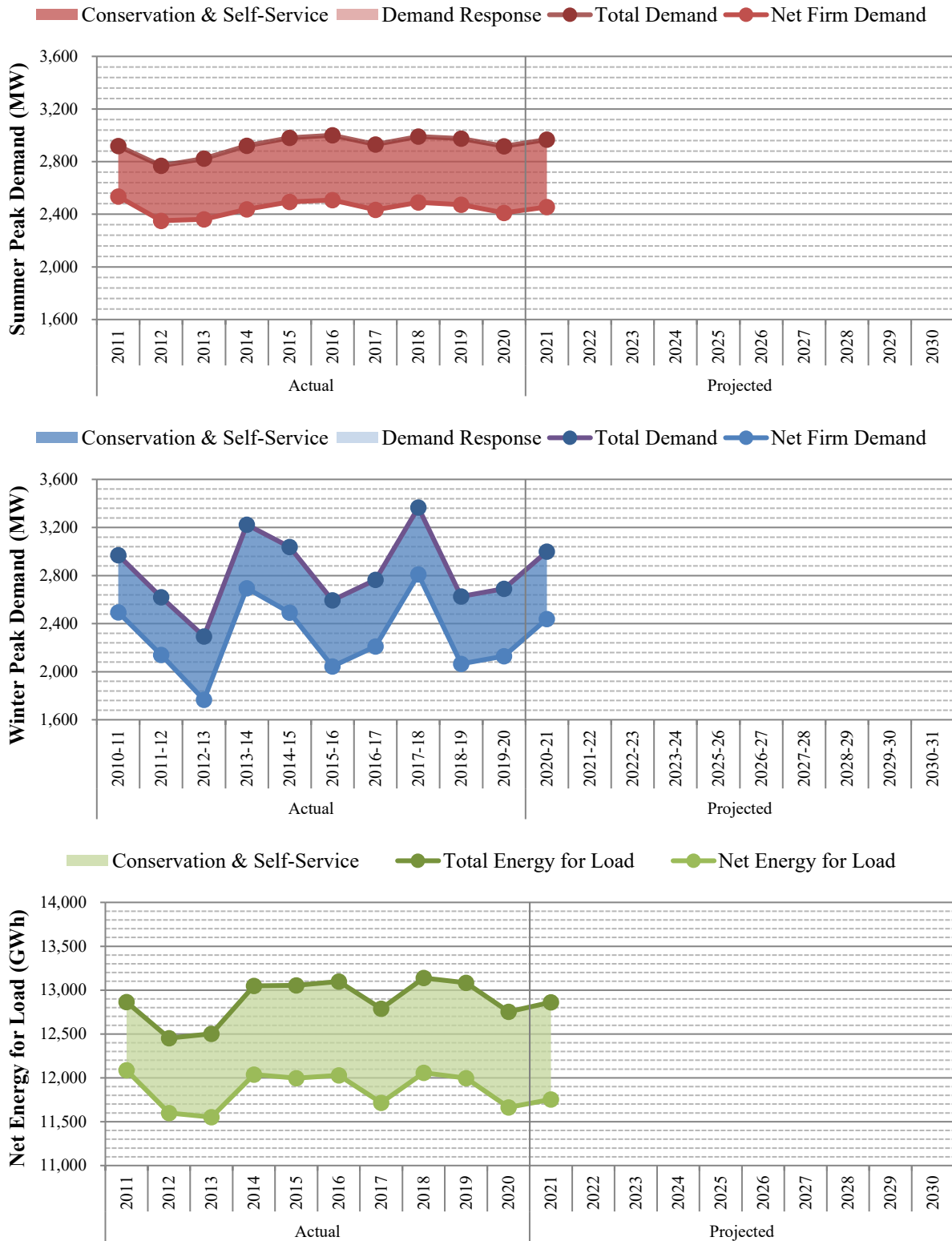
As investor-owned utilities, FPL and GPC are subject to FEECA and currently offer energy efficiency and demand response programs to customers to reduce peak demand and annual energy consumption. The last FEECA goal-setting proceeding was completed in November 2019, establishing goals for the period 2020 through 2024.

**Figure 20: FPL Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

**Figure 21: GPC Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 11 shows FPL’s and GPC’s actual net energy for load by fuel type for 2020, and the projected fuel mix for the combined companies for 2030. FPL relies primarily upon natural gas and nuclear for energy generation, making up approximately 75 percent of net energy for load in 2020. GPC was an energy exporter in 2020, producing approximately 22 percent more energy than it required for native load. While natural gas was the dominant fuel source in 2020, nuclear was the second most utilized fuel source. FPL projects that renewable energy will provide over 18 percent of its generation by 2030, which is the second highest percentage of renewable energy generation in 2030 of the TYSP Utilities.

**Table 11: FPL and GPC Energy Generation by Fuel Type**

Fuel Type	Net Energy for Load					
	FPL		GPC		FPL	
	2020		2020		2030	
	GWh	%	GWh	%	GWh	%
Natural Gas	95,278	74.7%	10,474	89.8%	89,672	61.4%
Coal	1,636	1.3%	2,067	17.7%	238	0.2%
Nuclear	28,221	22.1%	0	0.0%	28,421	19.5%
Oil	119	0.1%	0	0.0%	4	0.0%
Renewable	3,785	3.0%	1,423	12.2%	26,638	18.2%
Interchange	0	0.0%	-2,671	-22.9%	0	0.0%
Other	(1,519)	-1.2%	372	3.2%	1,147	0.8%
<b>Total</b>	<b>127,519</b>		<b>11,665</b>		<b>146,119</b>	

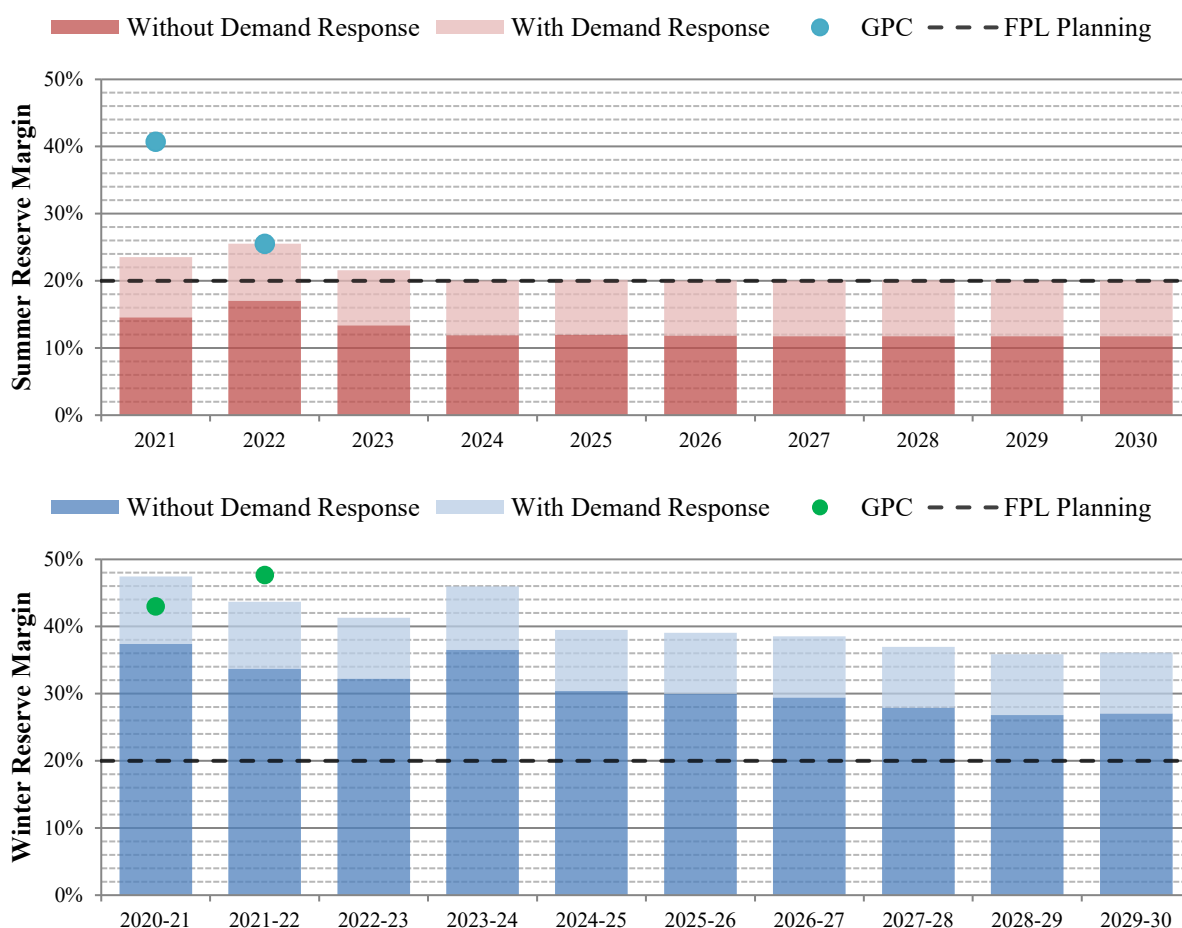
Source: 2021 Ten-Year Site Plan

## Reliability Requirements

While previously only reserve margin has been discussed, Florida’s utilities use multiple indices to determine the reliability of its electric supply. An additional metric is the Loss of Load Probability (LOLP), which is a probabilistic assessment of the duration of time electric customer demand will exceed electric supply, and is measured in units of days per year. FPL uses a maximum LOLP of no more than 0.1 days per year, or approximately 1 day of outage per 10 years. Between the two reliability indices, LOLP and reserve margin, the reserve margin requirement is typically the controlling factor for the addition of capacity.

Since 1999, FPL has utilized a 20 percent reserve margin criterion for planning based on a stipulation approved by the Commission, while GPC did not have an explicit planning reserve margin criteria for 2020 through 2021. Figure 22 displays the forecast planning reserve margin for GPC (through 2021) and FPL through the planning period for both seasons, with and without the use of demand response. As shown in the figure, FPL’s generation needs are controlled by its summer peak throughout the planning period.

**Figure 22: FPL and GPC Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

In addition to LOLP and the reserve margin, FPL utilizes a third reliability criterion which it refers to as its 10 percent generation-only reserve margin. This criterion requires that available firm capacity be 10 percent greater than the sum of customer seasonal demand, without consideration of incremental energy efficiency and all existing and incremental demand response resources. Currently, no other utility utilizes this same metric. FPL’s generation-only reserve margin is not the controlling factor for any planned unit additions. However, it does provide useful information regarding the assurance that the projected 20 percent reserve margin will be realized.

While FPL does not include incremental energy efficiency resources and cumulative demand response in its resource planning for the generation-only reserve margin criterion, the utility would remain subject to FEECA and the conservation goals established by the Commission. FPL would continue paying rebates and other incentives to participants, which are collected from all ratepayers through the Energy Conservation Cost Recovery Clause, but would not consider the potential capacity reductions of any future participation in energy efficiency or demand response programs during the 10-year planning period for planning purposes only when using this reliability criterion.

Energy efficiency, which includes installation of equipment designed to reduce peak demand and annual energy consumption, is considered a passive resource. While demand response must be activated by the utility, energy efficiency provides benefits consistently for the duration of the installation, reducing annual energy consumption, and if usage is coincident with system peak, peak demand. Customers do not remove building envelope improvements or newly installed equipment until the end of its service life for replacement.

As noted in the Statewide Perspective, the Commission does review the impact on reserve margin of demand response resources. At this time, FPL offers two types of demand response programs. The first type is interruptible and curtailable load programs, consisting of the Commercial/Industrial Load Control Program (CILC) and Commercial/Industrial Demand Reduction Rider (CDR) tariffs. The second type is load management programs, including the Residential On-Call and Business On-Call Programs. FPL utilizes load management programs on residential customers more often than commercial/industrial customers. GPC also has utilized demand response as a way of meeting reserve margin requirements through two types of demand response programs. The first type a curtailable load through the Commercial Curtailable Load Program, and time of use rates. The second type is automated energy monitoring through its Energy Select Program, which helps customers monitor and control energy consumption.

### **Generation Resources**

Both FPL and GPC plan multiple unit retirements and additions during the planning period. These changes are as described in Table 12 for the FPL region and Table 13 for the GPC region. A combined total of 1,287 MW of coal generation is being retired, between FPL's partial ownership of Scherer 4 (634 MW) and GPC's Daniel 1 & 2 (502 MW) and Crist 4 & 5 (156 MW). FPL also plans to retire the natural gas-fired steam units Manatee 1 & 2 in 2021 due to the significant annual capital and operation and maintenance (O&M) costs required to keep these relatively fuel-inefficient units operational. FPL also plans to retire four smaller oil and gas CT units with a total capacity of 44 MW over the planning period from the GPC territory.

Regarding additions, before the interconnection with FPL, GPC plans four natural gas-fired CTs, Crist 8, for a total of 938 MW in 2021. FPL's Dania Beach Clean Energy Center, a natural gas-fired combined cycle unit, which was grant a determination of need on March 19, 2018 and is expected to be in-service by 2022. The projected in-service dates of FPL's planned nuclear units are outside the 10-year planning period.

FPL and GPC also plan to add approximately 9,300 MW of solar photovoltaic plants over the planning period. These include approximately 1,490 MW from the SolarTogether Program, which was approved by the Commission in March 2020. Approximately 7,600 MW of solar is planned for the FPL region and 1,700 MW for the GPC region. Solar makes up approximately 80 percent of FPL's and GPC's planned future units. The values above do not reflect the proposed settlement agreement in FPL's base rate case, Docket No. 20210015-EI, which included an additional expansion of the SolarTogether program. If approved, the expansion would be reflected in next year's Ten-Year Site Plan.

FPL and GPC anticipate adding a total of 1,169 MW of battery storage over the planning period. FPL's 469 MW battery storage project is planned for 2022, of which 409 MW will be placed in service in Manatee County to offset the retirement of Manatee 1 & 2. FPL has plans for three more



battery projects totaling 700 MW. The batteries being deployed in these projects will expand the number of storage applications and configurations that FPL will be able to test, as well as making the scale of deployment more meaningful, given the large size of FPL's system.

**Table 12: FPL Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (MW)	Notes
			Sum	Sum	
<b>Retiring Units</b>					
2021	Manatee 1 & 2	NG – ST	1,626	N/A	
2021	Scherer 4	BIT- ST	634	N/A	
<b>Total Retirements</b>			<b>2,260</b>		
<b>New Units</b>					
2021	Pelican Solar	PV	75	36	Docket No. 20190061-EI
2021	Magnolia Springs	PV	75	36	
2021	Rodeo Solar	PV	75	36	
2021	Discovery Solar	PV	75	36	
2021	Willow Solar	PV	75	36	
2021	Orange Blossom Solar	PV	75	36	
2021	Palm Bay Solar	PV	75	36	
2021	Fort Drum Solar	PV	75	36	
2021	Sabal Palm Solar	PV	75	36	
2022	Manatee Energy Storage	BAT	409	N/A	
2022	Sunshine Gateway Energy Storage	BAT	30	N/A	
2022	Echo River Energy Storage	BAT	30	N/A	
2022	Dania Beach Clean Energy Center	NG – CC	1,163	N/A	Docket No. 20170225-EI
2022	Ghost Orchid Solar	PV	75	39	
2022	Sawgrass Solar	PV	75	39	
2022	Sundew Solar	PV	75	39	
2022	Immokalee Solar	PV	75	39	
2022	Grove Solar	PV	75	39	
2022	Elder Branch Solar	PV	75	39	
2023	Everglades Solar	PV	75	30	
2023	Whitetail Solar	PV	75	30	
2023	Bluefield Preserve Solar	PV	75	30	
2023	Cavendish Solar	PV	75	30	
2023	Anhinga Solar	PV	75	30	
2024	Unknown Solar	PV	522	263	
2025	Unknown Solar	PV	522	263	
2026	Unknown Solar	PV	894	370	
2027	Unknown Solar	PV	969	396	
2028	Unknown Solar	PV	1,192	473	
2029	Unknown Solar	PV	1,043	224	
2029	Unsitied Battery Storage	BAT	300	N/A	
2030	Unknown Solar	PV	968	198	
2030	Unsitied Battery Storage	BAT	100	N/A	
<b>Total New Units</b>			<b>9,642</b>	<b>2,895</b>	
<b>Net Additions</b>			<b>7,382</b>		

Source: 2021 Ten-Year Site Plan

**Table 13: GPC Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (MW)	Notes
			Sum	Sum	
<b>Retiring Units</b>					
2024	Daniel 1 & 2	BIT - ST	502	N/A	
2024	Crist 4	BIT - ST	78	N/A	
2025	Pea Ridge 1 - 3	NG - CT	12	N/A	
2026	Crist 5	BIT - ST	78	N/A	
2027	Lansing Smith A	DFO - CT	32	N/A	
<b>Total Retirements</b>			<b>702</b>		
<b>New Units</b>					
2022	Crist 8	NG - CT	938	N/A	4 Combustion Turbines
2022	Blue Springs Solar	PV	75	41	
2022	Cotton Creek	PV	75	43	
2023	Blackwater Solar	PV	75	37	
2023	Chipola Solar	PV	75	37	
2023	Flowers Creek Solar	PV	75	37	
2023	First City Solar	PV	75	37	
2023	Apalachee Solar	PV	75	37	
2024	Unknown Solar	PV	373	171	
2025	Unknown Solar	PV	373	171	
2026	Unknown Solar	PV	75	34	
2029	Unknown Solar	PV	149	60	
2030	Unknown Solar	PV	224	90	
2030	Unsitied Battery Storage	BAT	300	N/A	
<b>Total New Units</b>			<b>2,019</b>	<b>795</b>	
<b>Net Additions</b>			<b>1,317</b>		

Source: 2021 Ten-Year Site Plan



## Duke Energy Florida, LLC (DEF)

DEF is an investor-owned utility and Florida's second largest electric utility. The utility's service territory is within the FRCC region and is primarily in central and west central Florida. As an investor-owned utility, the Commission has regulatory authority over all aspects of operations, including rates, reliability, and safety. Pursuant to Section 186.801(2), F.S., the Commission finds DEF's 2021 Ten-Year Site Plan suitable for planning purposes.

### Load & Energy Forecasts

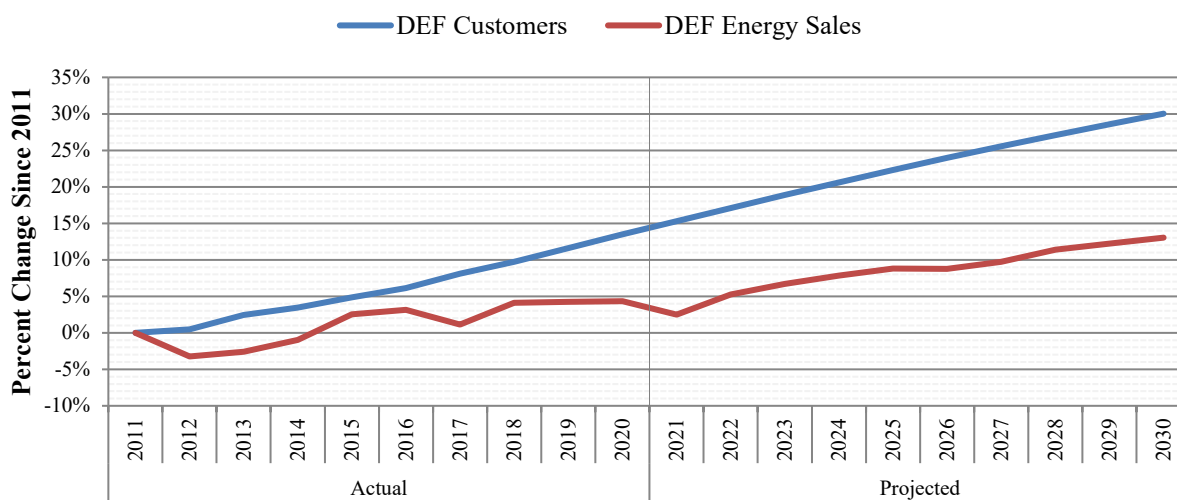
In 2020, DEF had approximately 1,863,814 customers and annual retail energy sales of 39,230 GWh or approximately 16.9 percent of Florida's annual retail energy sales. DEF's total customers grew 1.69 percent approximately in 2020. Figure 23 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, DEF's customer base has increased by 13.50 percent, while retail sales have grown by 4.34 percent.

DEF's customer growth has always been dominated by the Residential and Commercial customer classes. Customer growth trends are driven by broad economic and demographic factors such as population growth, migration, retirement, affordable housing, mortgage rates and job growth. More recent information reflects a return to the long-term trend of population migration into Florida. Commercial customer growth typically tracks residential growth supplying needed services.

As indicated previously in the Statewide Perspective section of this Report, the projected retail energy sales trend reflects the product of the utilities' forecasted number of customers and forecasted energy consumption per customer. Per customer usage for DEF's residential and commercial classes are primarily driven by fluctuations in electricity price, end use appliance saturation and efficiency improvement, housing type/building size, improved building codes, and space conditioning equipment fuel type. With respect to the average KWh consumption per customer, the utility is aware that the ability to self-generate recently has begun to make more of an impact. A small percentage of industrial/commercial customers have chosen to install their own natural gas generation, reducing consumption from the power grid. Similarly, residential and some commercial accounts have reduced their utility requirements by installing solar panels behind their meter. The utility also noted that the penetration of plug-in electric vehicles has grown, leading to an increase in residential use per customer, all else being equal.

For the 2021 10-year forecast horizon, DEF's forecast results indicate that the utility's customer base are projected to grow at an average annual rate of 1.35 percent, and its retail energy sales are projected to grow at a average annual rate of 1.10 percent.

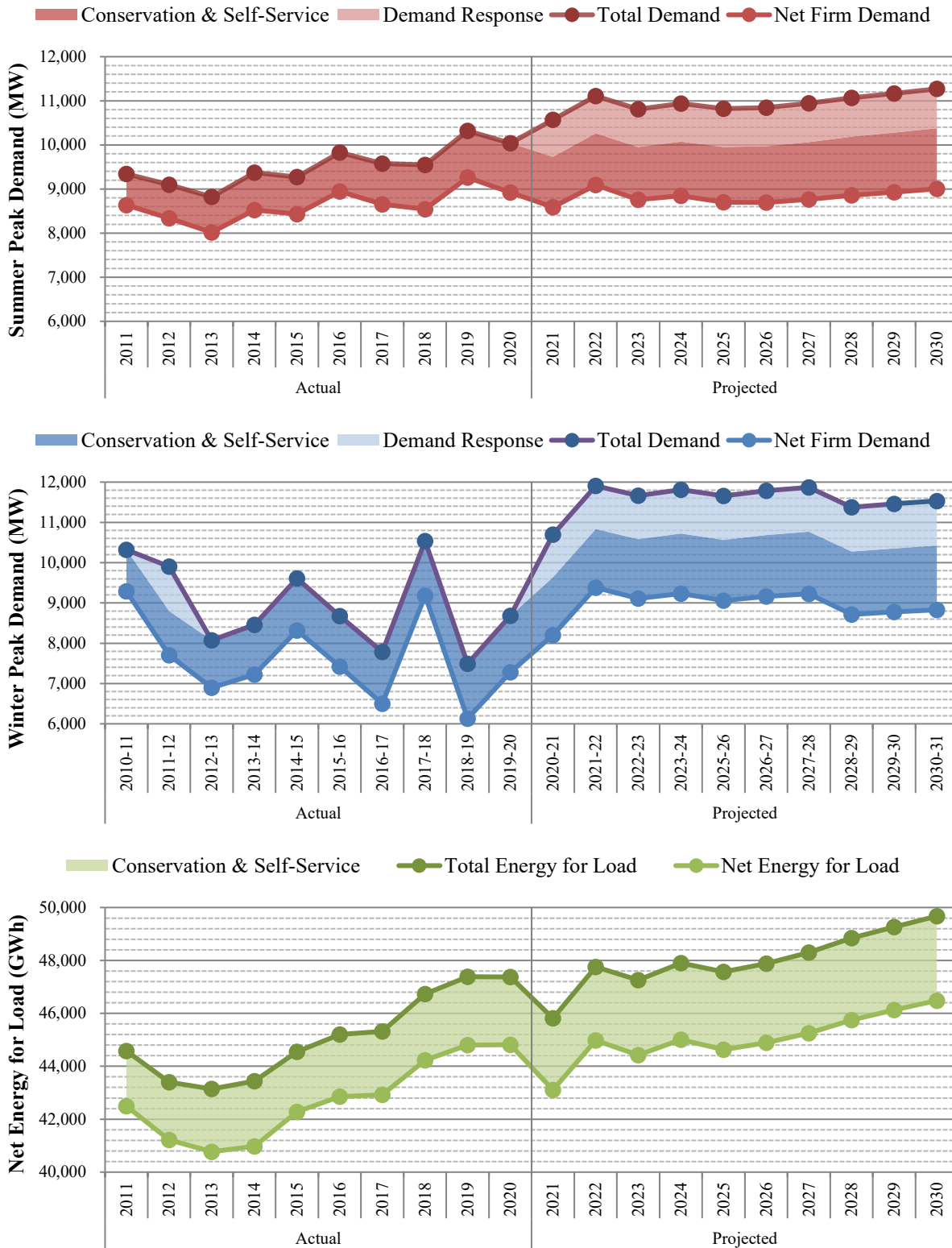
**Figure 23: DEF Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 24 show DEF’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. These graphs include the full impact of demand-side management and assume that all available demand response resources will be activated during the seasonal peak. Historically, demand response has not been activated during seasonal peak demand, excluding extreme weather events. As an investor-owned utility, DEF is subject to FEECA, and currently offers energy efficiency and demand response programs to customers to reduce peak demand and annual energy consumption. In November 2019, the Commission established demand side management goals for the FEECA utilities for the years 2020 through 2024. DEF assumes the trends in these goals will be extended through the forecast period. The utility’s 2021 Ten-Year Site Plan reflects these goals.

**Figure 24: DEF Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 14 shows DEF’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. DEF relies primarily upon natural gas and coal for energy generation, making up approximately 81 percent of net energy for load. DEF plans to reduce coal usage over the planning period, and to increase renewable energy generation, making natural gas and renewable energy DEF’s primary sources of generation in 2030. DEF projects the fourth highest percentage of renewable energy generation in 2030 of the TYSP Utilities.

**Table 14: DEF Energy Generation by Fuel Type**

Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	36,327	81.1%	34,928	75.1%
Coal	3,287	7.3%	4,190	9.0%
Nuclear	0	0.0%	0	0.0%
Oil	33	0.1%	52	0.1%
Renewable	1,360	3.0%	7,293	15.7%
Interchange	1,025	2.3%	19	0.0%
NUG & Other	2,782	6.2%	2	0.0%
<b>Total</b>	<b>44,815</b>		<b>46,484</b>	

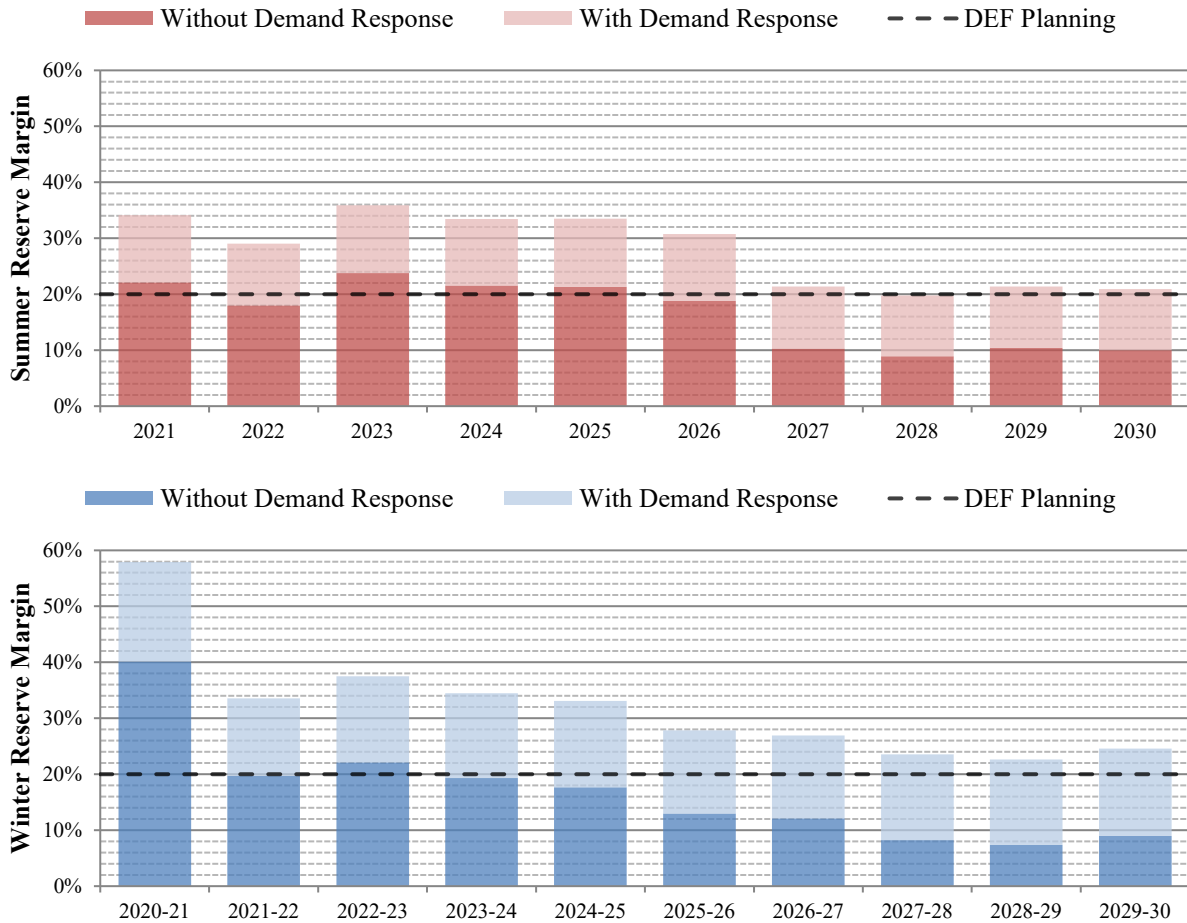
Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

Since 1999, DEF has utilized a 20 percent planning reserve margin criterion. Figure 25 displays the forecast planning reserve margin for DEF through the planning period for both seasons, with and without the use of demand response. As shown in the figure, DEF’s generation needs are mostly controlled by its summer peaking throughout the planning period. DEF’s reserve margin, inclusive of demand response, is projected to be 19.8 percent in the summer of 2028. As DEF approaches this date, the utility will continue to evaluate how to meet its 20 percent reserve margin criterion.



**Figure 25: DEF Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

### Generation Resources

DEF projects multiple unit retirements and additions during the planning period, as described in Table 15. DEF plans to retire one gas and several oil-fired units at multiple power plant sites. DEF is adding two combustion turbines, one in 2027 and one in 2029, at undesignated sites. Transmission upgrades to be completed in 2024 will also allow DEF to fully utilize its existing Osprey facility, with the incremental available firm capacity listed in Table 15.

DEF has included 2,025 MW of planned solar additions, which make up approximately 73 percent of DEF’s planned total new capacity. In July 2020, DEF petitioned the Commission to implement a Clean Energy Connection program (CEC), which is designed to be a community solar program through which participating customers can voluntarily subscribe to a share of new solar energy centers.<sup>12</sup> The Order approving the CEC program is currently under appeal at the Supreme Court of Florida.

<sup>12</sup> See Docket No. 20200176-EI, *In re: Petition for a limited proceeding to approve clean energy connection program and tariff and stipulation, by Duke Energy Florida, LLC*.

**Table 15: DEF Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (Summer)	Notes
			Sum	Sum	
<b>Retiring Units</b>					
2025	Bayboro P1-4	DFO – CT	171	N/A	
2027	Debary P2-6	DFO – CT	247	N/A	
2027	Bartow P1 & 3	DFO – CT	82	N/A	
2027	University of Florida P1	NG – CT	43	N/A	
<b>Total Retired MW</b>			<b>543</b>	<b>N/A</b>	
<b>New Units</b>					
2021	Twin Rivers	PV	75	43	Docket 20200245-EI
2021	Santa Fe	PV	75	43	
2021	Duette	PV	75	42	
2021	Charlie Creek	PV	75	43	
2022	Sandy Creek	PV	75	43	
2022	Fort Green	PV	75	43	
2022	Bay Trail	PV	75	43	
2023	Clean Energy Connection	PV	300	171	Docket No.20200176-EI
2024	Osprey	NG – CC	337	-	Transmission Upgrades
2024	Clean Energy Connection	PV	300	171	Docket No.20200176-EI
2025	Unknown Solar	PV	150	37	
2026	Unknown Solar	PV	150	37	
2027	Unknown CT	NG – CT	214	-	
2027	Unknown Solar	PV	75	19	
2028	Unknown Solar	PV	75	19	
2029	Unknown Solar	PV	75	19	
2029	Unknown CT	NG – CT	214	-	
2030	Unknown Solar	PV	375	47	
<b>Total New MW</b>			<b>2,790</b>	<b>820</b>	
<b>Net Additions</b>			<b>2,247</b>		

Source: 2021 Ten-Year Site Plan

## Tampa Electric Company (TECO)

TECO is an investor-owned utility and Florida's third largest electric utility. The utility's service territory is within the FRCC region and consists primarily of the Tampa metropolitan area. As an investor-owned utility, the Commission has regulatory authority over all aspects of operations, including rates, reliability, and safety. Pursuant to Section 186.801(2), F.S., the Commission finds TECO's 2021 Ten-Year Site Plan suitable for planning purposes.

### Load & Energy Forecasts

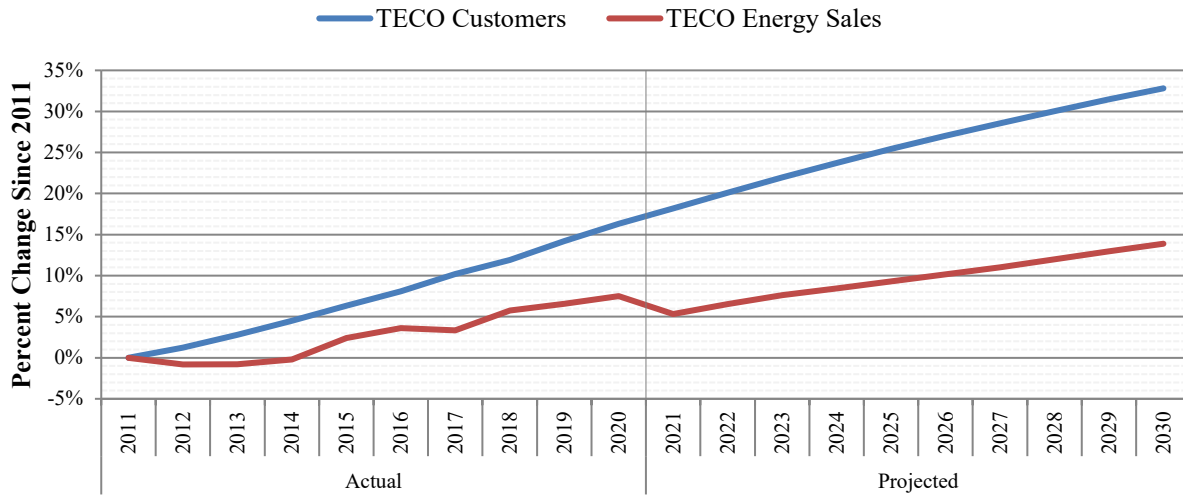
In 2020, TECO had approximately 786,047 customers and annual retail energy sales of 19,954 GWh or approximately 8.6 percent of Florida's annual retail energy sales. Figure 26 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, TECO's customer base has increased by 16.31 percent, while retail sales have increased by 7.49 percent.

TECO's total customer growth in 2020 averaged 1.8 percent with the residential class being the engine behind the growth. Over the next 10 years customer growth is expected to increase at an average rate of 1.31 percent annually. The primary driver of customer growth will be new construction and increasing net in-migration to the utility's service area.

TECO's average annual energy consumption per residential customer increased in 2020 due to hotter than normal weather and more people working/schooling from home due to COVID-19. The utility's commercial, governmental, and industrial average annual consumption per customer decreased in 2020. The COVID-19 impacts on residential and commercial average energy consumption are projected to slowly move back to more normal levels during 2021. Residential average consumption per customer is projected to decline at an average annual rate of 0.2 percent over the next 10 years. The primary drivers behind the declining residential per customer consumption are increases in appliance efficiencies, lighting efficiencies, energy efficiency in new homes, conservation efforts, and housing mix. As mining continues to move south and out of TECO's service territory, energy consumption declines in the phosphate sector would emphasize the downward trend of the industrial average energy consumption.

The utility's forecast results indicated that the retail energy sales are projected to grow at an annual average rate of 0.87 percent for the next 10 years.

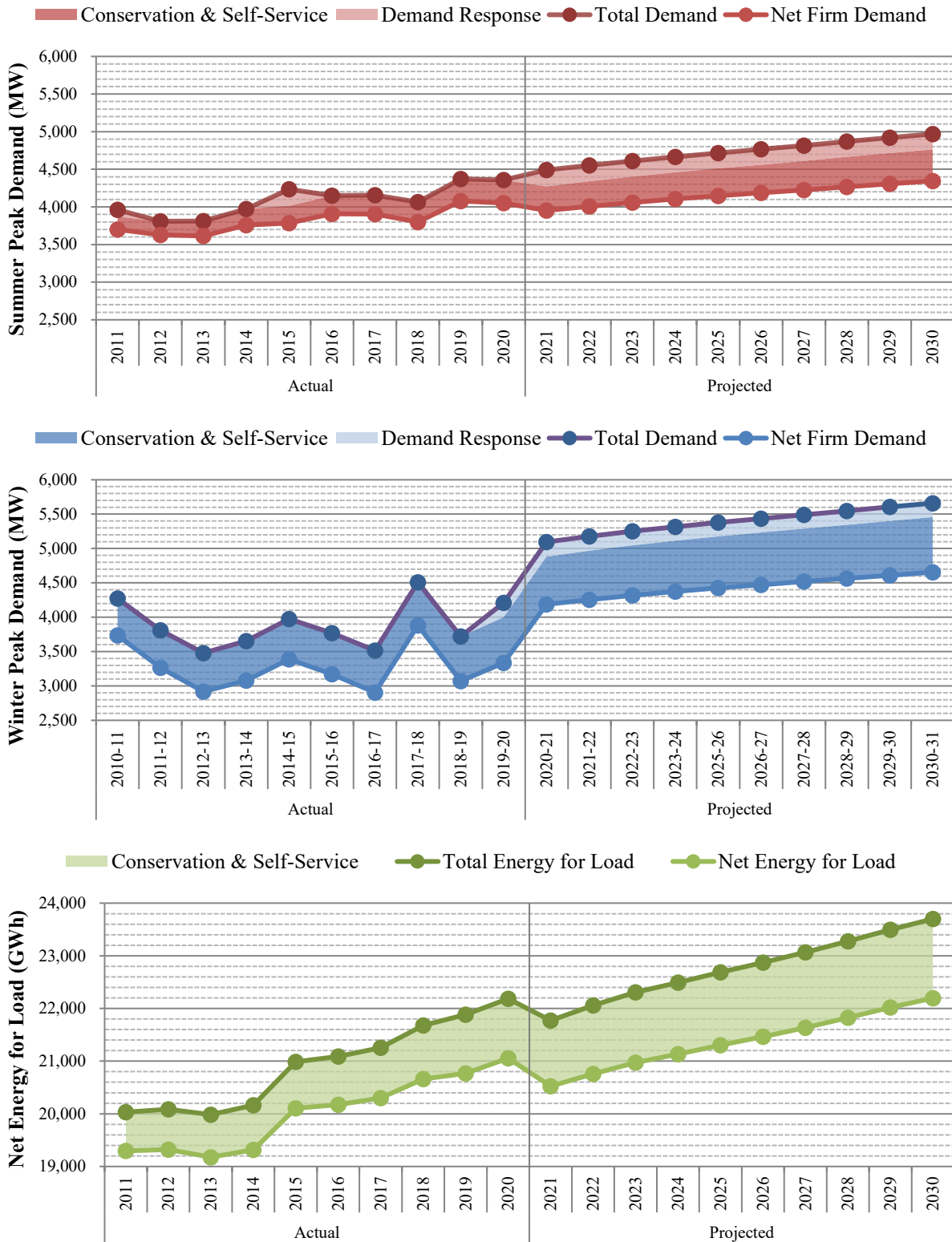
**Figure 26: TECO Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 27 show TECO’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. These graphs include the full impact of demand-side management, and assume that all available demand response resources will be activated during the seasonal peak. Historically, demand response has not been activated during seasonal peak demand, excluding extreme weather events. As an investor-owned utility, TECO is subject to FEECA and currently offers energy efficiency and demand response programs to customers to reduce peak demand and annual energy consumption. In 2020, TECO continued operating within the 2015-2024 DSM Plan which supports the approved FPSC goals as required by FEECA. The utility’s 2021 Ten-Year Site Plan reflects these goals.

**Figure 27: TECO Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 16 shows TECO’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. Based on its 2021 Ten-Year Site Plan, natural gas is used for the majority of TECO’s energy generation. Natural gas accounts for approximately 78 percent of net energy for load. In the future, TECO projects that energy from coal will decrease and energy from renewables will increase. TECO projects that renewable energy will increase from 5.6 percent to 17.8 percent by 2030. TECO projects the third highest percentage of renewable energy generation in 2030 of the TYSP Utilities.

**Table 16: TECO Energy Generation by Fuel Type**

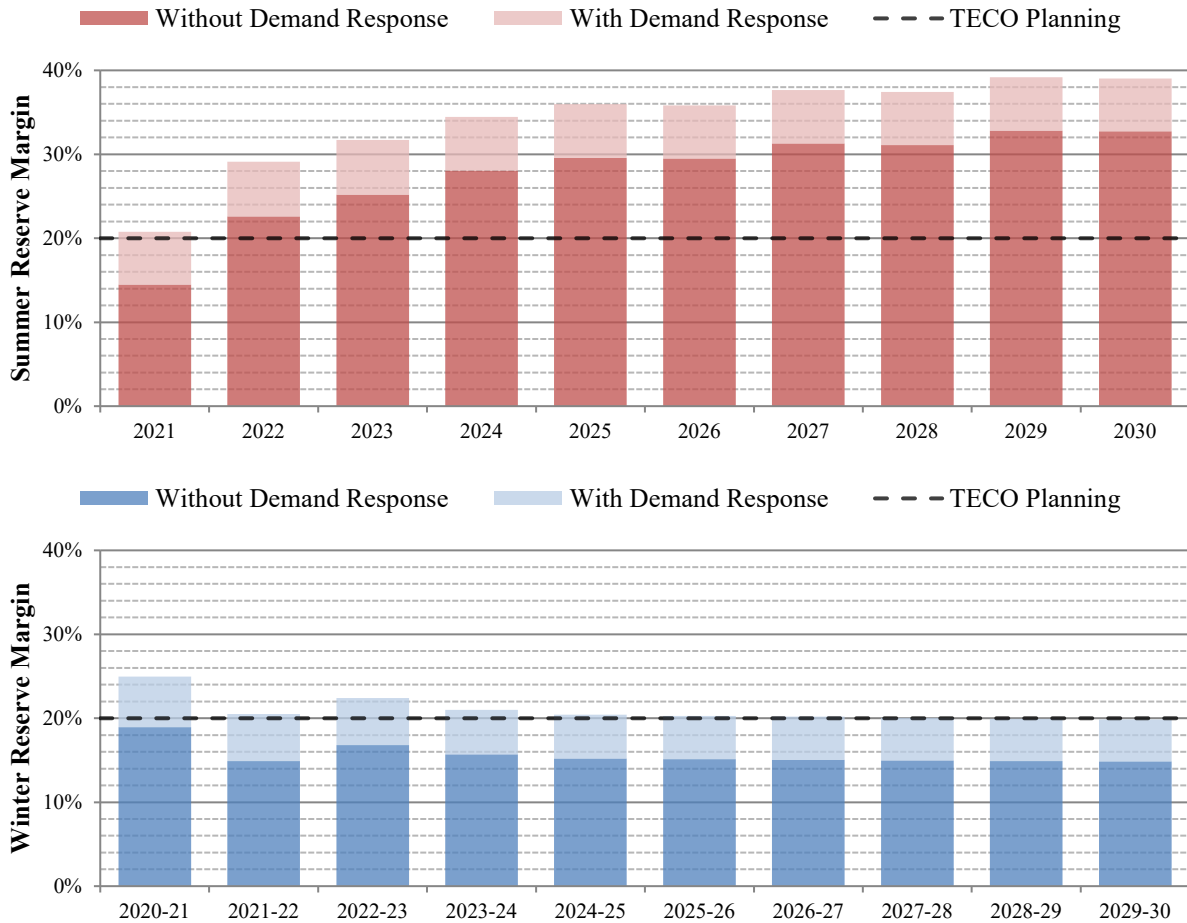
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
<b>Natural Gas</b>	16,514	<b>78.4%</b>	17,660	<b>79.5%</b>
<b>Coal</b>	909	<b>4.3%</b>	393	<b>1.8%</b>
<b>Nuclear</b>	0	<b>0.0%</b>	0	<b>0.0%</b>
<b>Oil</b>	2	<b>0.0%</b>	0	<b>0.0%</b>
<b>Renewable</b>	1,120	<b>5.3%</b>	3,951	<b>17.8%</b>
<b>Interchange</b>	1,175	<b>5.6%</b>	0	<b>0.0%</b>
<b>NUG &amp; Other</b>	1,335	<b>6.3%</b>	201	<b>0.9%</b>
<b>Total</b>	<b>21,055</b>		<b>22,205</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

Since 1999, TECO has utilized a 20 percent planning reserve margin criterion. TECO also elects to maintain a minimum supply-side reserve margin of 7 percent. Figure 28 displays the forecast planning reserve margin for TECO through the planning period for both seasons, with and without the use of demand response. As shown in the figure, TECO’s generation needs begin to be controlled by its winter peak this year. TECO’s current and planned investments in solar generation contribute to this shift in planning because solar resources provide coincident capacity during the summer peak but not the winter peak. TECO’s 7 percent supply-side only reserve margin is not the controlling factor for any planned unit additions. However, it does provide useful information regarding the assurance that the projected 20 percent reserve margin will be realized.

**Figure 28: TECO Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

TECO plans two unit retirements and multiple unit additions during the planning period, as described in Table 17. TECO anticipates retiring its natural gas-fired Big Bend Units 2 and 3 and converting its stand-alone Big Bend Unit 1 steam turbine into a natural gas-fired combined cycle unit. The Florida Department of Environmental Protection has found that a determination of need is not necessary for this conversion.

TECO also anticipates adding several solar projects over the planning period. The utility has included 1,262 MW of planned solar. All planned solar additions make up approximately 48 percent of TECO’s planned total new capacity.

TECO also plans the addition of several distributed energy resources throughout its territory. Over the planning period, the utility also plans to add 300 MW of battery storage. These additions are projected to yield improved environmental and reliability benefits, to enhance operational flexibility, and to improve system resiliency.

**Table 17: TECO Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (Summer)	Notes
			Sum	Sum	
<b>Retiring Units</b>					
2021	Big Bend 2	NG – ST	385	N/A	
2023	Big Bend 3	NG – ST	395	N/A	
<b>Total Retirements</b>			<b>780</b>	<b>N/A</b>	
<b>New Units</b>					
2021	Durrance Solar	PV	60	35	
2021	Mountain View Solar	PV	53	30	
2021	Big Bend II Solar	PV	25	14	
2021	Jamison Solar	PV	75	42	
2021	Magnolia Solar	PV	75	42	
2021	Big Bend CT 5 & 6	NG – CT	720	-	Converted to CC in 2022
2022	Big Bend CC Conversion	NG – CC	335	-	Incremental Capacity of CC
2022	Laurel Oaks Solar	PV	67	37	
2022	Riverside Solar	PV	65	36	
2022	Big Bend III Solar	PV	22	12	
2022	Palm River Dairy Solar	PV	70	39	
2023	Alafia Solar	PV	50	28	
2023	Wheeler Solar	PV	75	42	
2023	Dover Solar	PV	25	14	
2024	Reciprocating Engine	NG – IC	37	-	2 Reciprocating Engines
2024	Future Solar 1	PV	150	84	
2025	Battery Storage 1	BAT	50	-	
2026	Battery Storage 2	BAT	50	-	
2026	Future Solar 2	PV	150	84	
2027	Battery Storage 3	BAT	50	-	
2028	Battery Storage 4	BAT	50	-	
2028	Future Solar 3	PV	150	84	
2029	Battery Storage 5	BAT	50	-	
2030	Battery Storage 6	BAT	50	-	
2030	Future Solar 4	PV	150	84	
<b>Total New Units</b>			<b>2,654</b>	<b>707</b>	
<b>Net Additions</b>			<b>1,874</b>		

Source: 2021 Ten-Year Site Plan



## Florida Municipal Power Agency (FMPA)

FMPA is a governmental wholesale power company owned by several Florida municipal utilities throughout the state. Collectively, FMPA is Florida's eighth largest electric utility and third largest municipal electric utility. While FMPA has 31 member systems, only those members who are participants in the All-Requirements Power Supply Project (ARP) are addressed in the utility's Ten-Year Site Plan. FMPA is responsible for planning activities associated with ARP member systems. For a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds FMPA's 2021 Ten-Year Site Plan suitable for planning purposes.

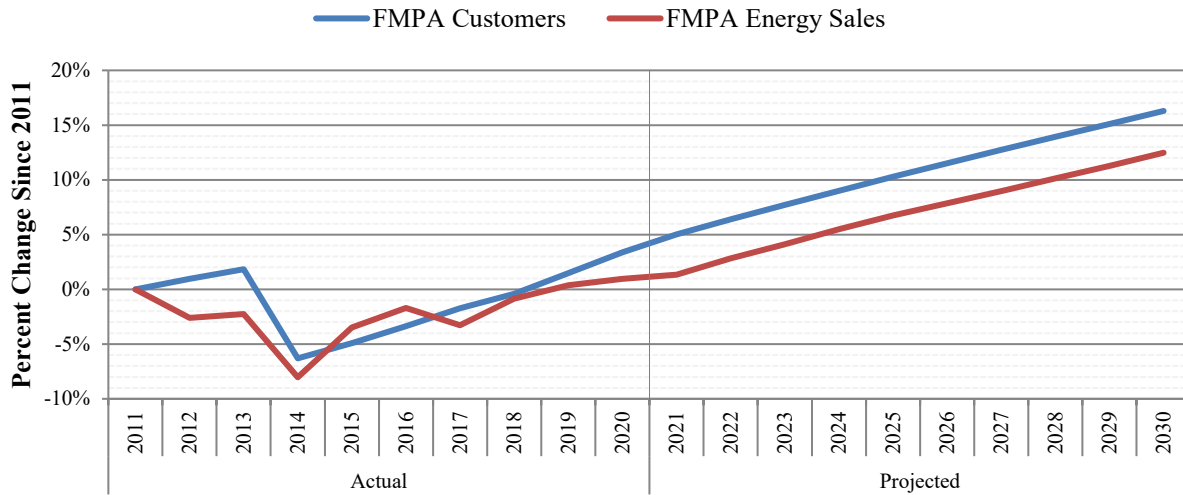
### Load & Energy Forecasts

In 2020, FMPA had approximately 271,118 customers and annual retail energy sales of 5,876 GWh or approximately 2.5 percent of Florida's annual retail energy sales. Figure 29 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, FMPA's customer base has increased by 3.39 percent, while retail sales have increased by 0.95 percent. FMPA's retail energy sales growth rate is anticipated to exceed its historic 2020 peak in 2021.

FMPA noted that its customer energy usage has been flat due to a decline in both the residential and non-residential sectors in recent years. There are countervailing factors that influence usage. In general, declines in electricity prices, improvements in the employment situation, increased average income, and reductions in vacancy rates and under-occupied accounts have a small upward impact on usage. Concurrently, the lingering effects of the recent 2007-08 recession in terms of reduced propensity to spend, a continued orientation to conservation, and continued improvement in energy efficiency, driven primarily from technological advances, equipment standards, and building codes, place downward pressure on average usage. These impacts have been offset by strong customer count gains in certain areas of the utility's service territories, which has resulted in continued recovery in net energy for load since the 2007-08 recession.

For the current 10-year forecast horizon, the utility is projecting a 1.14 percent average annual growth rate for customer base, and 1.17 percent average annual growth rate for retail energy sales.

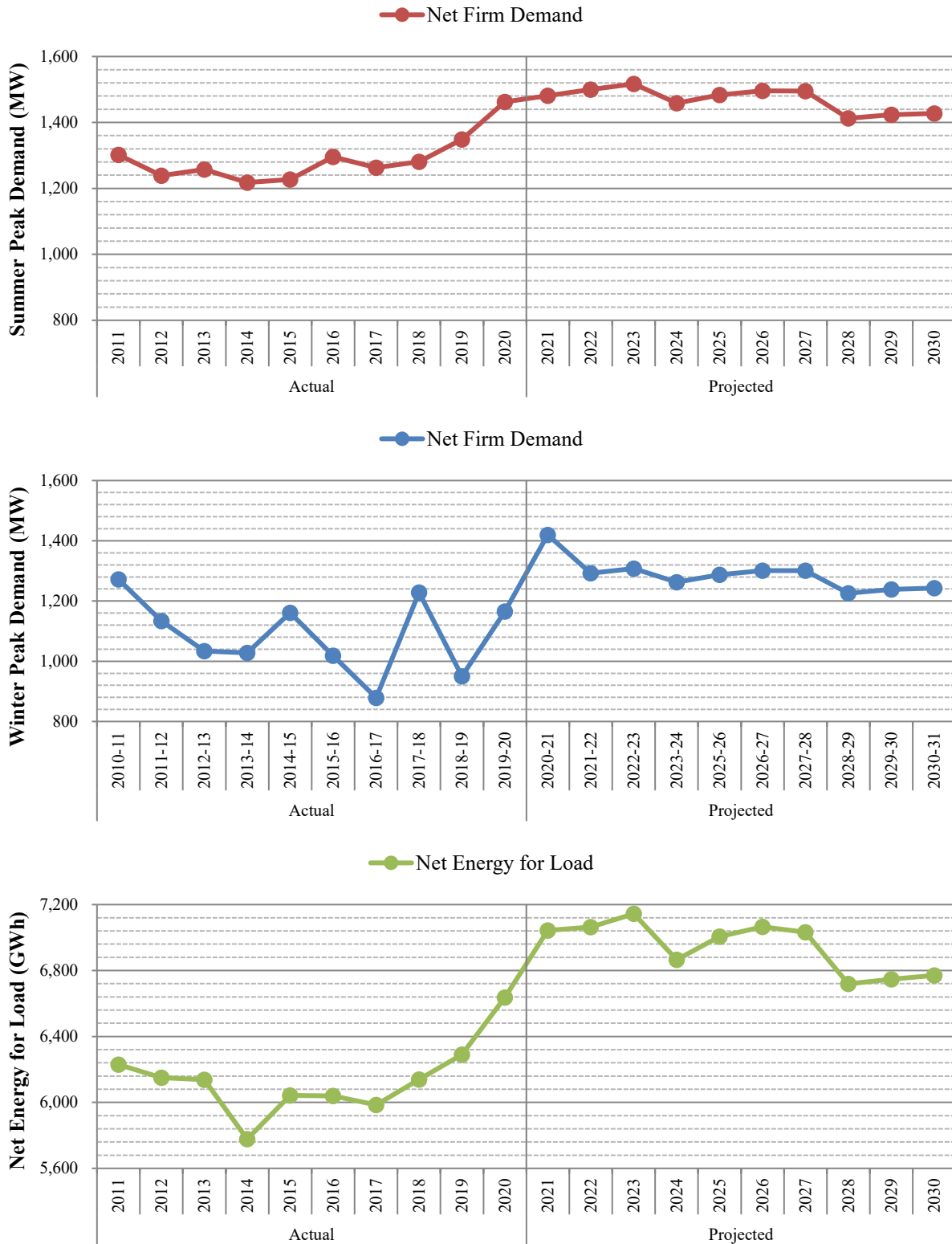
**Figure 29: FMPA Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 30 show FMPA’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. As FMPA is a wholesale power company, it does not directly engage in energy efficiency or demand response programs. ARP member systems do offer demand-side management programs, the impacts of which are included in the graphs.

**Figure 30: FMPA Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 18 shows FMPA’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. FMPA uses natural gas as its primary fuel, supplemented by coal and nuclear generation. FMPA projects to end energy generation from coal by 2026, but approximately 93 percent of energy would still be sourced from natural gas and nuclear. FMPA projects serving 7 percent of its net energy for load with renewable resources by the end of the planning period.

**Table 18: FMPA Energy Generation by Fuel Type**

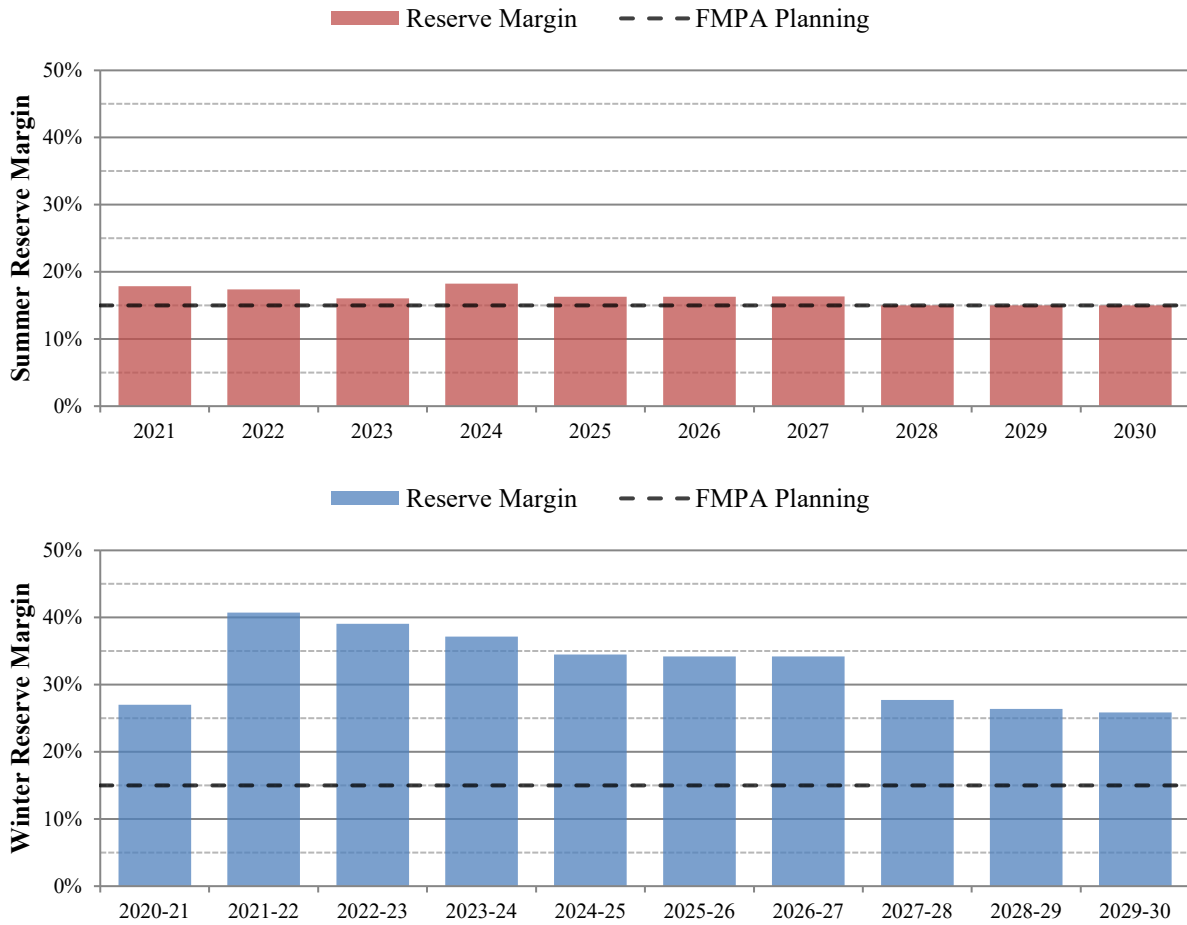
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	5,189	78.2%	5,921	87.4%
Coal	924	13.9%	0	0.0%
Nuclear	413	6.2%	376	5.6%
Oil	3	0.1%	1	0.0%
Renewable	108	1.6%	473	7.0%
Interchange	0	0.0%	0	0.0%
NUG & Other	0	0.0%	0	0.0%
<b>Total</b>	<b>6,637</b>		<b>6,771</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

FMPA utilizes a 15 percent planning reserve margin criterion. Figure 31 displays the forecast planning reserve margin for FMPA through the planning period for both seasons, inclusive of impacts from energy efficiency programs. As shown in the figure, FMPA’s generation needs are controlled by its summer peak throughout the planning period.

**Figure 31: FMPA Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

### Generation Resources

FMPA plans no unit additions or retirements during the planning period.



## Gainesville Regional Utilities (GRU)

GRU is a municipal utility and the smallest electric utility required to file a Ten-Year Site Plan. The utility's service territory is within the FRCC region and consists of the City of Gainesville and its surrounding area. GRU also provides wholesale power to the City of Alachua and Clay Electric Cooperative. As a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds GRU's 2021 Ten-Year Site Plan suitable for planning purposes.

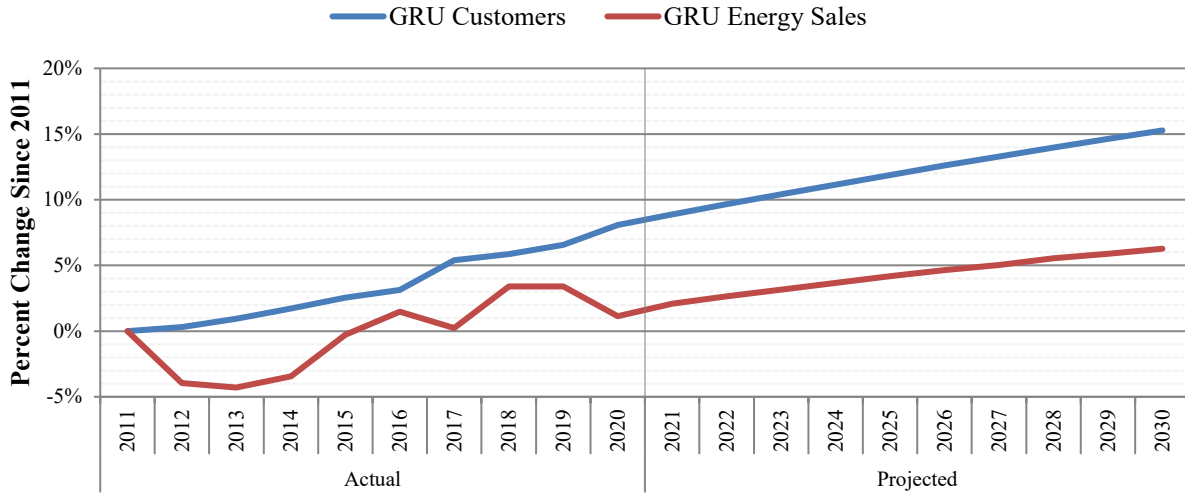
### **Load & Energy Forecasts**

In 2020, GRU had approximately 99,714 customers and annual retail energy sales of 1,790 GWh, or approximately 0.8 percent of Florida's annual retail energy sales. Over the last 10 years, GRU's customer base has increased by 8.07 percent, while retail sales have increased by 1.13 percent. Figure 32 illustrates GRU's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. It shows that GRU's retail energy sales are anticipated to exceed its historic 2019 peak in 2024 during this planning period.

GRU experienced a decline in per customer energy consumption at an annual rate of 0.24 percent and 1.24 percent, respectively, for its residential and non-residential classes over the past 10 years. For the next 10 years, the utility projects the declining rates of energy consumption of 0.25 percent and 0.30 percent per year, respectively, for these classes. Some of the factors believed to effect consumption per customer historically include the 2007-08 recession, increasing electricity prices, and improved building envelopes and energy efficiency standards (regulatory) and measures (utility induced). GRU noted that, in general, the COVID-19 Pandemic resulted in increased residential usage and reduced non-residential usage.

For the current 10-year forecast horizon, the utility's customer numbers are projected to grow at an annual average rate of 0.64 percent, and the retail energy sales are projected to grow at an annual average rate of 0.45 percent. The utility indicated that growth of retail energy sales is positively influenced by customer growth and offset negatively by consumption per customer.

**Figure 32: GRU Growth**

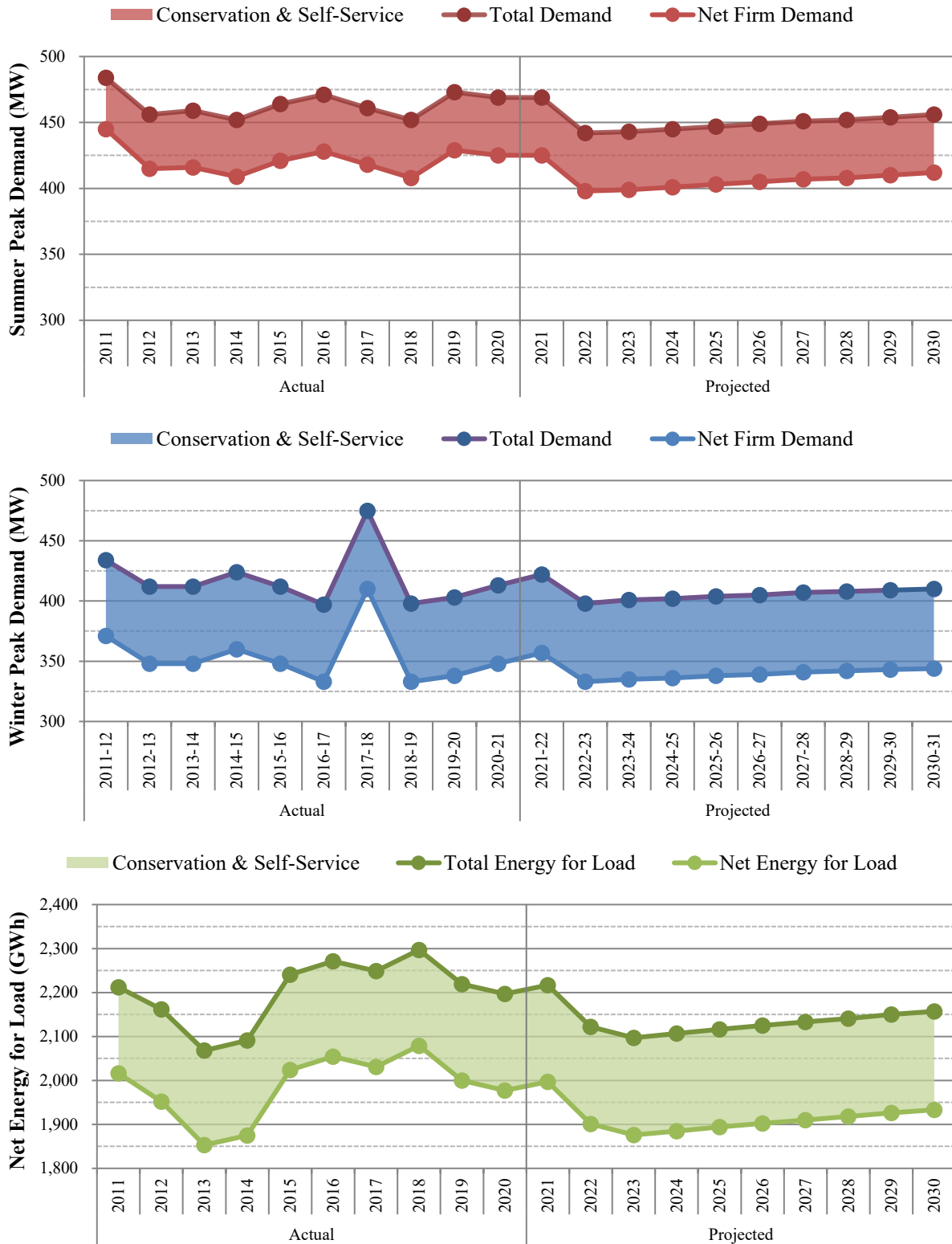


Source: 2021 Ten-Year Site Plan

The three graphs in Figure 33 show GRU’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. GRU engages in multiple energy efficiency programs to reduce customer peak demand and annual energy for load. The graphs in Figure 33 include the impact of these demand-side management programs.



**Figure 33: GRU Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 19 shows GRU’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. In 2020, natural gas was the primary fuel followed by renewables and coal respectively. By 2030 natural gas and renewables are expected to increase in usage, while coal usage is expected to end by 2022.

**Table 19: GRU Energy Generation by Fuel Type**

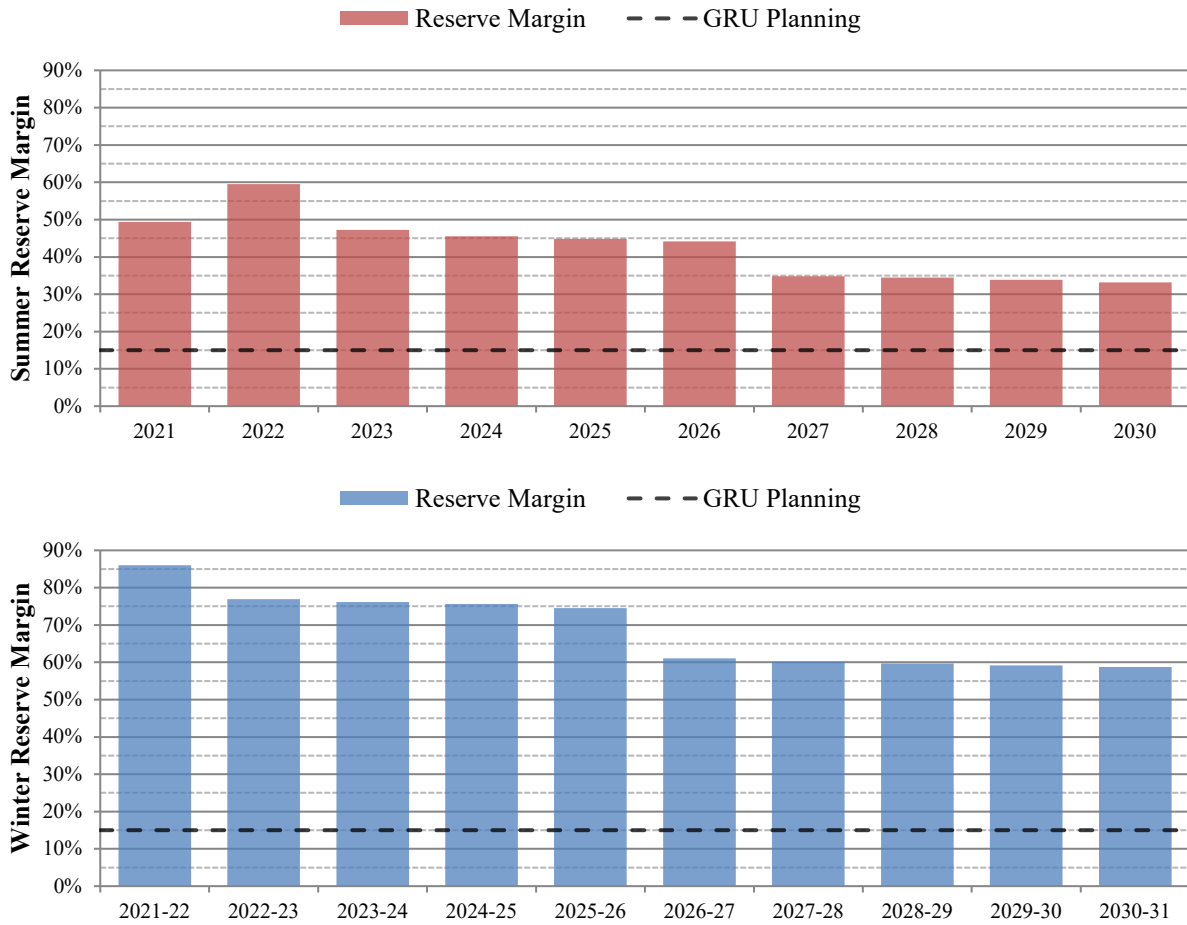
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	1,278	64.6%	1,410	72.9%
Coal	215	10.9%	0	0.0%
Nuclear	0	0.0%	0	0.0%
Oil	0	0.0%	0	0.0%
Renewable	394	19.9%	501	25.9%
Interchange	90	4.6%	22	1.1%
NUG & Other	0	0.0%	0	0.0%
<b>Total</b>	<b>1,977</b>		<b>1,933</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

GRU utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 34 displays the forecast planning reserve margin for GRU through the planning period for both seasons, including the impacts of demand-side management. As shown in the figure, GRU’s generation needs are controlled by its summer peak throughout the planning period. As a smaller utility, the reserve margin is an imperfect measure of reliability due to the relatively large impact a single unit may have on reserve margin.

**Figure 34: GRU Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

GRU currently plans to retire a natural gas-fired steam unit in 2022, and two natural gas-fired combustion turbines in 2026, as described in Table 20. As a smaller utility, single units can have a large impact upon reserve margin.

**Table 20: GRU Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)
			Sum
<b>Retiring Units</b>			
2022	Deerhaven FS01	NG – ST	75
2026	Deerhaven GT01 & GT02	NG – CT	35
<b>Total Retirements</b>			<b>110</b>
<b>Net Additions</b>			<b>(110)</b>

Source: 2021 Ten-Year Site Plan



## JEA

JEA, formerly known as Jacksonville Electric Authority, is Florida's largest municipal utility and fifth largest electric utility. JEA's service territory is within the FRCC region, and includes all of Duval County as well as portions of Clay and St. Johns Counties. As a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds JEA's 2021 Ten-Year Site Plan suitable for planning purposes.

### **Load & Energy Forecasts**

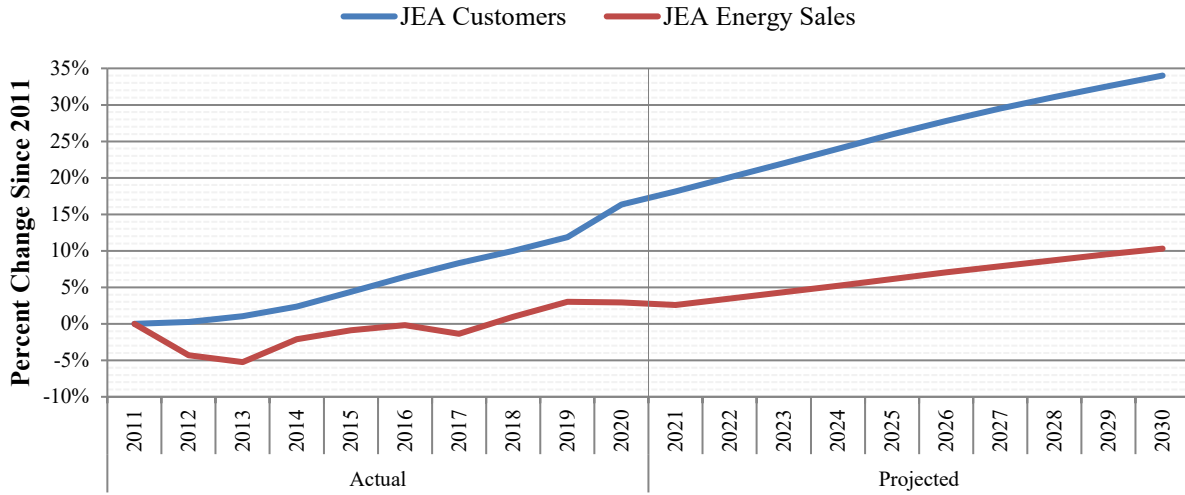
In 2020, JEA had approximately 483,471 customers and annual retail energy sales of 12,319 GWh or approximately 5.3 percent of Florida's annual retail energy sales. Figure 35 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, JEA's customer base has increased by 16.06 percent, while retail sales have increased by 2.93 percent.

JEA noted that overall, Moody's Analytics forecast for all parameters used in the utility's 2021 Ten-Year Site Plan forecast of customer growth are lower as compared to the previous forecasts. As a result, the Commercial and Industrial customer forecasts are lower as compared to previous years. The residential customer forecast however, shows a slightly higher forecasted customer growth rate as compared to previous year's forecasts.

The utility's growth rate for average annual energy consumption per customer is projected to decrease by 0.2 percent and 0.8 percent, respectively, for residential and commercial class in the forecast period of 2021 through 2030. JEA noted that demand-side management programs are one of the contributors to the decrease in annual energy consumption per residential customer. Several other factors that contribute to the declining trend include customer behavioral changes, increase in electric rates, housing type and federal central air conditioner-related requirements. However, JEA projected a 0.6 percent growth in the industrial average annual energy consumption for the next 10 years due to certain customers' business expansion and the utility's effort of service improvement.

For the next 10 years, the JEA's forecast results indicate that the customer numbers are projected to grow at an annual average rate of 1.41 percent; and the retail energy sales are projected to grow at an annual average rate of 0.81 percent.

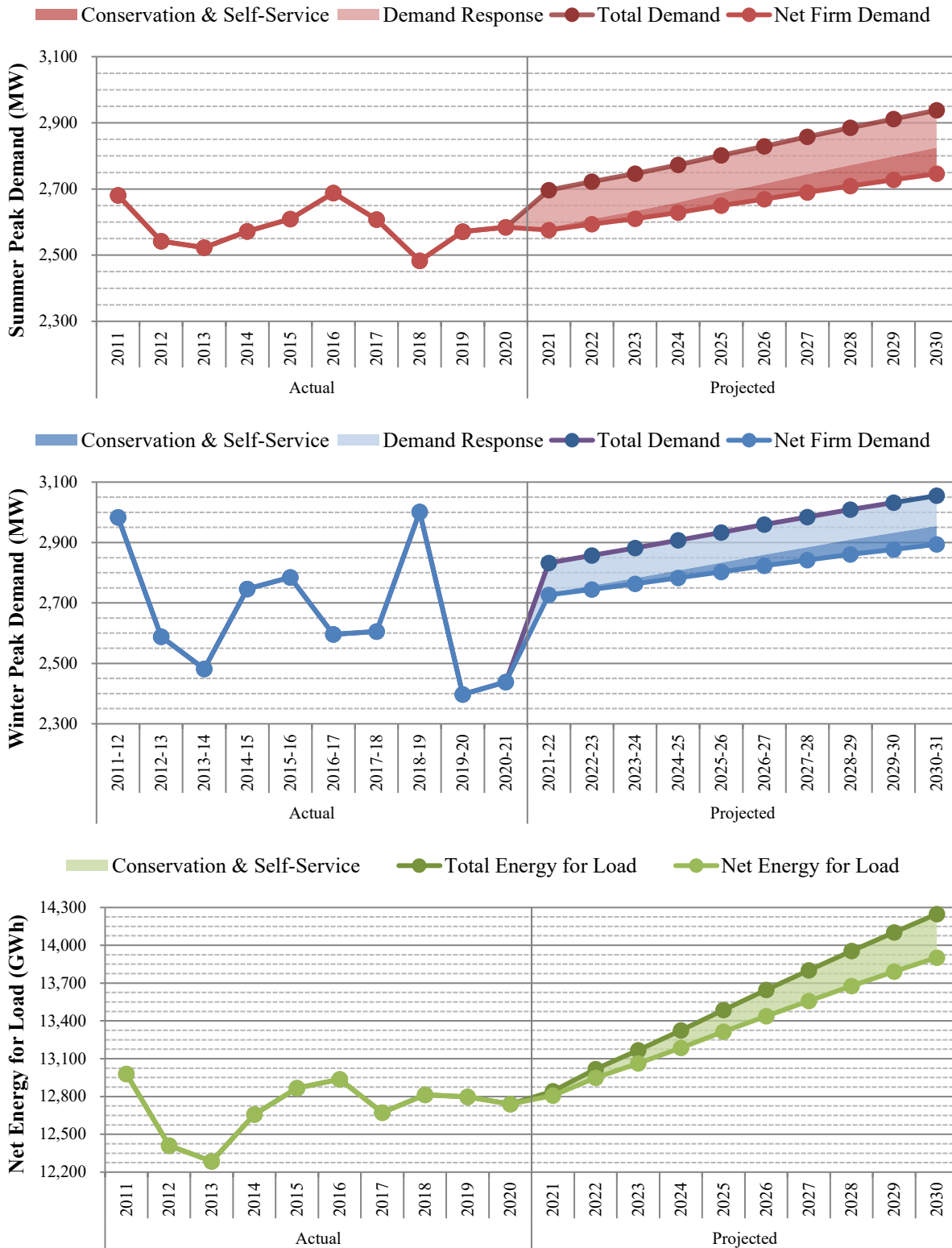
**Figure 35: JEA Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 36 show JEA’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. These graphs include the full impact of demand-side management, and assume that all available demand response resources will be activated during the seasonal peak.

**Figure 36: JEA Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

While a municipal utility, JEA is subject to FEECA and currently offers energy efficiency and demand response programs to customers to reduce peak demand and annual energy consumption. In November 2019, the FPSC established demand side management goals for the FEECA utilities for the years 2020 through 2024. The utility’s 2021 Ten-Year Site Plan reflects these goals.

### Fuel Diversity

Table 21 shows JEA’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. While natural gas was the dominant fuel source in 2020, coal was JEA’s second most utilized fuel source. JEA’s 2021 Ten-Year Site plan projects that a majority of JEA’s net energy for load will continue to come from natural gas and coal in 2030.

**Table 21: JEA Energy Generation by Fuel Type**

Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	8,229	64.6%	7,227	52.0%
Coal	3,020	23.7%	2,986	21.5%
Nuclear	0	0.0%	0	0.0%
Oil	3	0.0%	4	0.0%
Renewable	144	1.1%	660	4.7%
Interchange	1,344	10.5%	3,027	21.8%
NUG & Other	0	0.0%	0	0.0%
<b>Total</b>	<b>12,739</b>		<b>13,903</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

### Reliability Requirements

JEA utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 37 displays the forecast planning reserve margin for JEA through the planning period for both seasons, with and without the use of demand response. JEA’s current and planned purchased power agreements with solar generators contribute to this shift in planning because solar resources provide coincident capacity during the summer peak but not the winter peak.



**Figure 37: JEA Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

JEA plans no unit additions during the planning period. JEA plans to retire Northside Unit 3 sometime during the planning period. However, a date has yet to be selected. Due to this, Northside Unit 3 is still included in the reserve margin calculations for the 2021 Ten-Year Site Plan.



## Lakeland Electric (LAK)

LAK is a municipal utility and the state's third smallest electric utility required to file a Ten-Year Site Plan. The utility's service territory is within the FRCC region and consists of the City of Lakeland and surrounding areas. As a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds LAK's 2021 Ten-Year Site Plan suitable for planning purposes.

### Load & Energy Forecasts

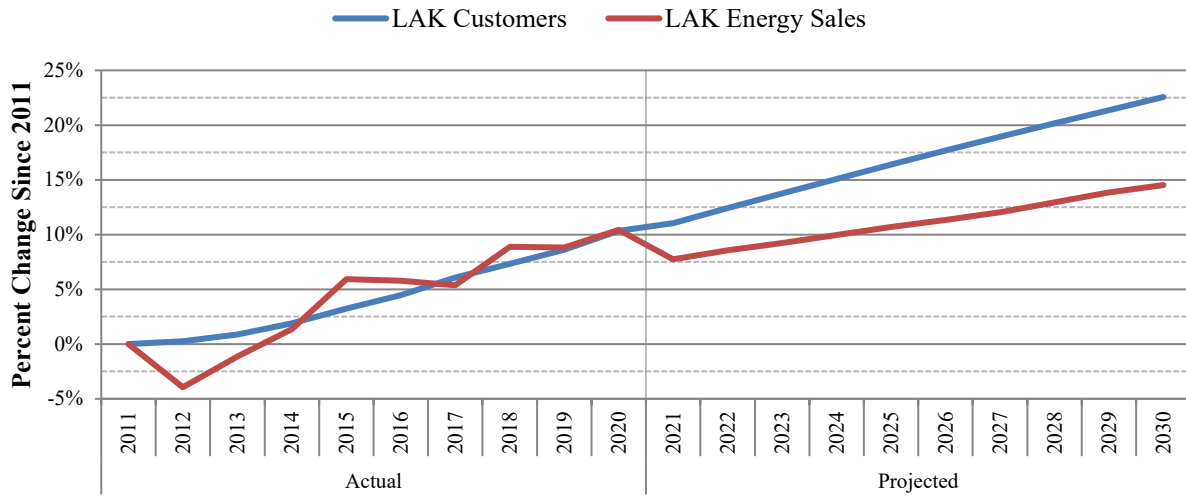
In 2020, LAK had approximately 134,321 customers and annual retail energy sales of 3,163 GWh or approximately 1.4 percent of Florida's annual retail energy sales. Figure 38 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, LAK's customer base has increased by 10.35 percent, while retail sales have grown by 10.44 percent.

In recent years, the LAK's service area in Polk County has seen a boom in e-commerce warehouse development due to its central location in Florida. Notably, Amazon moved its air hub from Tampa to Lakeland in the summer of 2020. In addition, the local business community is very active in promoting central Florida encouraging a diversity of industries to relocate there. LAK experienced 1.6 percent total customer growth in 2020 which is the highest growth rate for the utility in the past 10 years.

The utility noted that its residential average energy consumption has been declining and this trend is expected to continue. The main factors that contribute to the decline include increased appliance energy efficiency, improved building shell insulation, and changes in residential building type mix. LAK's commercial average energy consumption has also been declining, and this trend is expected to continue. Main contributors to the historical decline are lighting upgrades, appliance energy efficiency improvements, and the customer adoption of energy management systems. LAK is forecasting a flattening of the industrial average energy consumption mainly because a small number of customers are projected to be added, and such customers are expected to be mostly classified in the "small demand" industrial category.

LAK noted that although the average energy consumption is declining or flat for all three main rate classes, positive customer growth rates are expected to compensate for average use declines. For the next 10 years, the utility's forecast results indicated that its number of customers are projected to grow at an annual average rate of 1.10 percent, and its retail energy sales are projected to grow at an annual average rate of 0.68 percent.

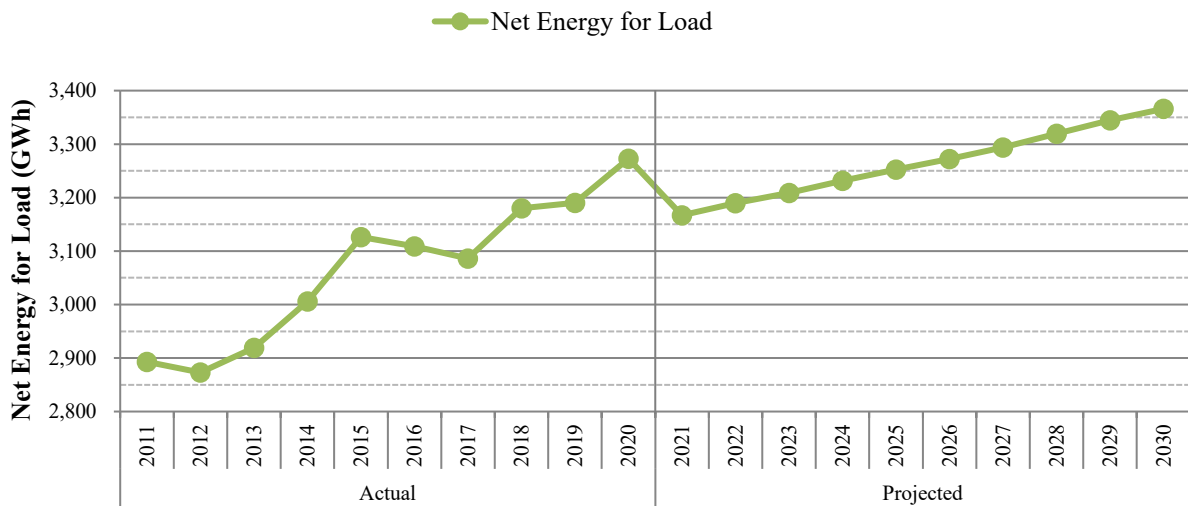
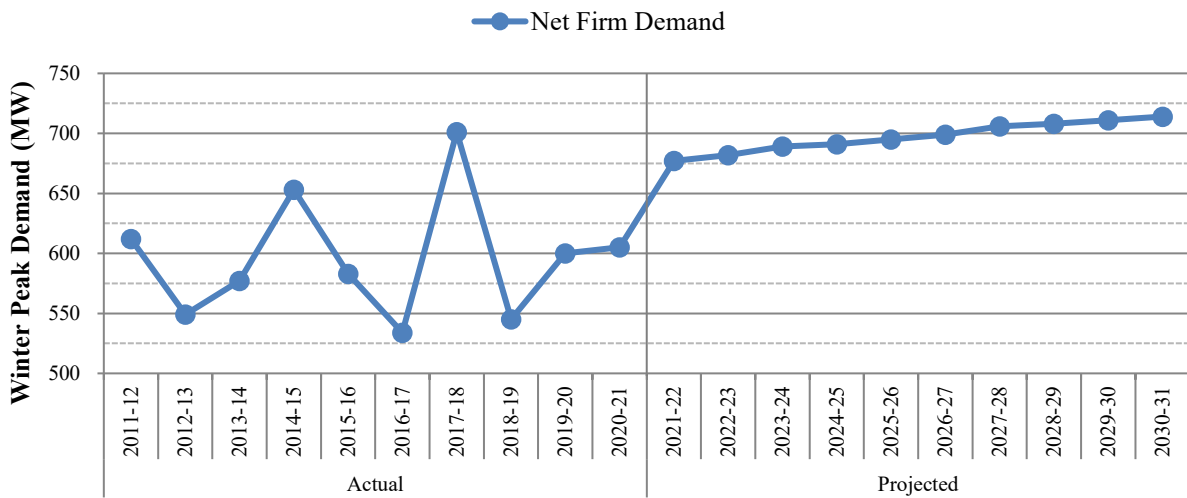
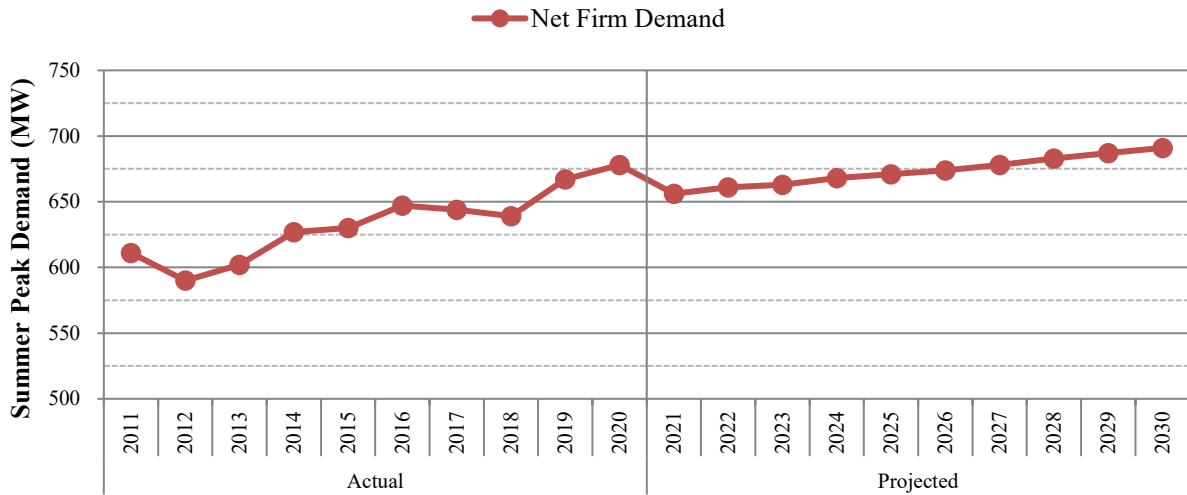
**Figure 38: LAK Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 39 show LAK’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. LAK offers energy efficiency programs, the impacts of which are included in the graphs.

**Figure 39: LAK Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 22 shows LAK’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. LAK uses natural gas as its primary fuel type for energy, with coal representing about 14 percent net energy for load. While natural gas generation is anticipated to increase over the next 10 years; generation by coal is projected to be phased out by March 2021.

**Table 22: LAK Energy Generation by Fuel Type**

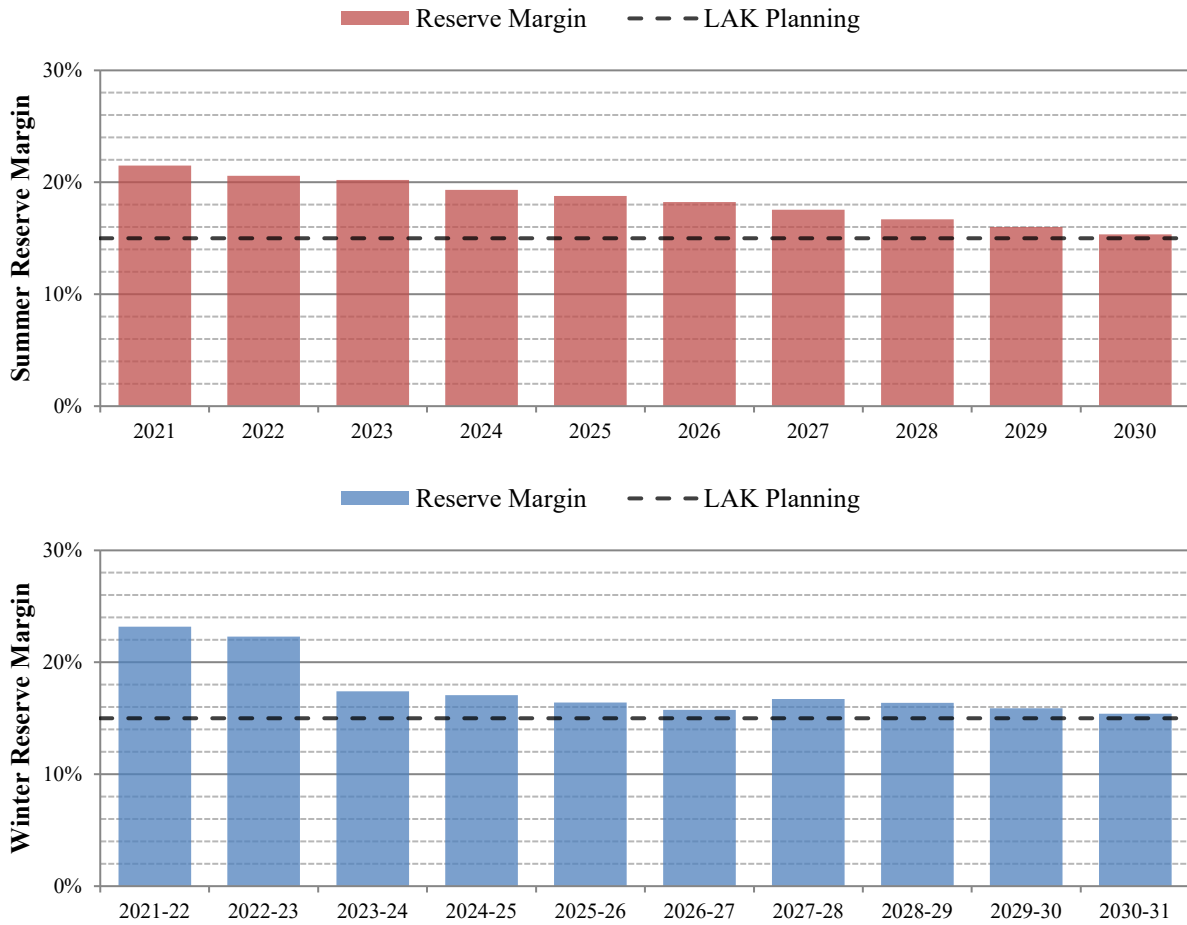
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	2,118	64.7%	2,956	87.8%
Coal	452	13.8%	0	0.0%
Nuclear	0	0.0%	0	0.0%
Oil	1	0.0%	1	0.0%
Renewable	28	0.9%	161	4.8%
Interchange	0	0.0%	0	0.0%
NUG & Other	675	20.6%	248	7.4%
<b>Total</b>	<b>3,274</b>		<b>3,366</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

LAK utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 40 displays the forecast planning reserve margin for LAK through the planning period for both seasons, including the impacts of demand-side management. As a smaller utility, the reserve margin is an imperfect measure of reliability due to the relatively large impact a single unit may have on reserve margin. For example, LAK’s largest single unit, McIntosh 5, a natural gas-fired combined cycle unit, represented 50 percent of summer net firm peak demand in 2019.

**Figure 40: LAK Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

LAK plans on retiring its only coal-fired generating unit, and adding a set of natural gas internal combustion engines during the planning period, as detailed in Table 23.

**Table 23: LAK Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Notes
			Sum	
<b>Retiring Units</b>				
2021	McIntosh Unit No. 3	BIT-ST	205	
<b>New Units</b>				
2024	Unnamed IC	NG-IC	100	5 Reciprocating Engines
<b>Net Additions</b>			<b>(105)</b>	

Source: 2021 Ten-Year Site Plan and Data Responses





## Orlando Utilities Commission (OUC)

OUC is a municipal utility and Florida's seventh largest electric utility and second largest municipal utility. The utility's service territory is within the FRCC region and primarily consists of the Orlando metropolitan area. As a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds OUC's 2021 Ten-Year Site Plan suitable for planning purposes.

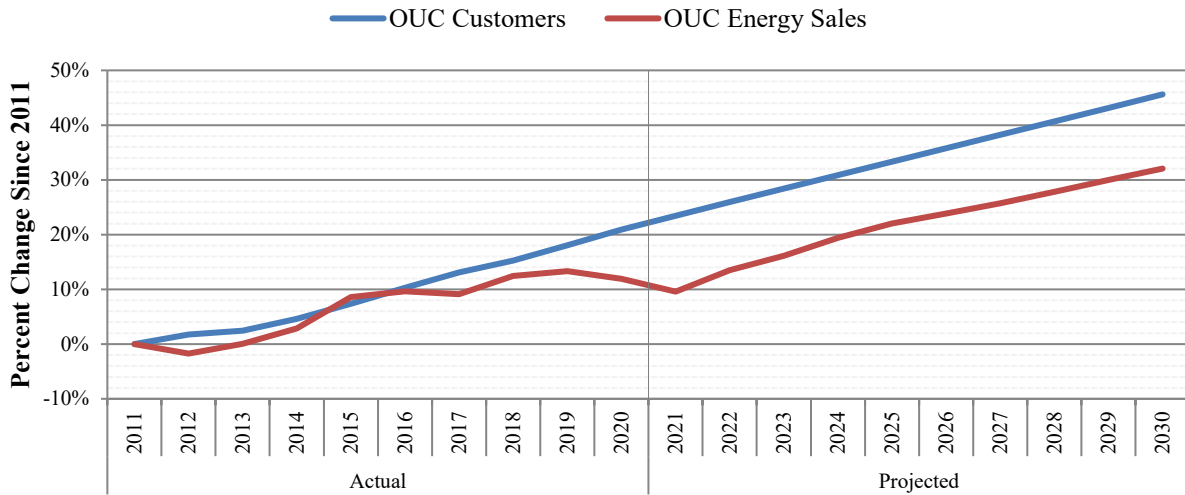
### Load & Energy Forecasts

In 2020, OUC had approximately 253,448 customers and annual retail energy sales of 6,740 GWh or approximately 2.9 percent of Florida's annual retail energy sales. Over the last 10 years, OUC's customer numbers have had an average annual growth of 2.13 percent, and retail sales had an average annual growth of 1.26 percent. Figure 41 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011.

Over the last 10 years, OUC's customer base has increased by 20.90 percent, while retail energy sales have increased by 11.94 percent, approximately. The utility expects a continued growth in customer numbers at an average annual rate of 1.85 percent, and retail sales at an average annual rate of 2.10 percent for the current forecast horizon. OUC noted that the main contributors to the higher customer growth include the increased population and household numbers in its service area. The main drivers for a higher expected growth rate of the energy sales than in the past include the recovery from COVID-19 effects, the projected growth in electric vehicle charging load and major commercial expansions from Universal Studios and the Orlando International Airport that are largely outside of normal growth.

OUC also noted a recent decline in average residential customer energy usage is attributed to the increased saturation of more efficient HVAC equipment and other electrical devices as well as customer conservation efforts. The utility's forecasted residential average energy usage is expected to remain relatively flat as increased electric vehicle charging mitigates further saturation of more efficient electrical equipment and conservation efforts. Commercial sales have also shown a slight, long-term declining use per customer trend that has been greatly exacerbated by the impacts of COVID-19 in 2020, which, however, is expected to nearly recover to pre-COVID levels by the end of the forecast period.

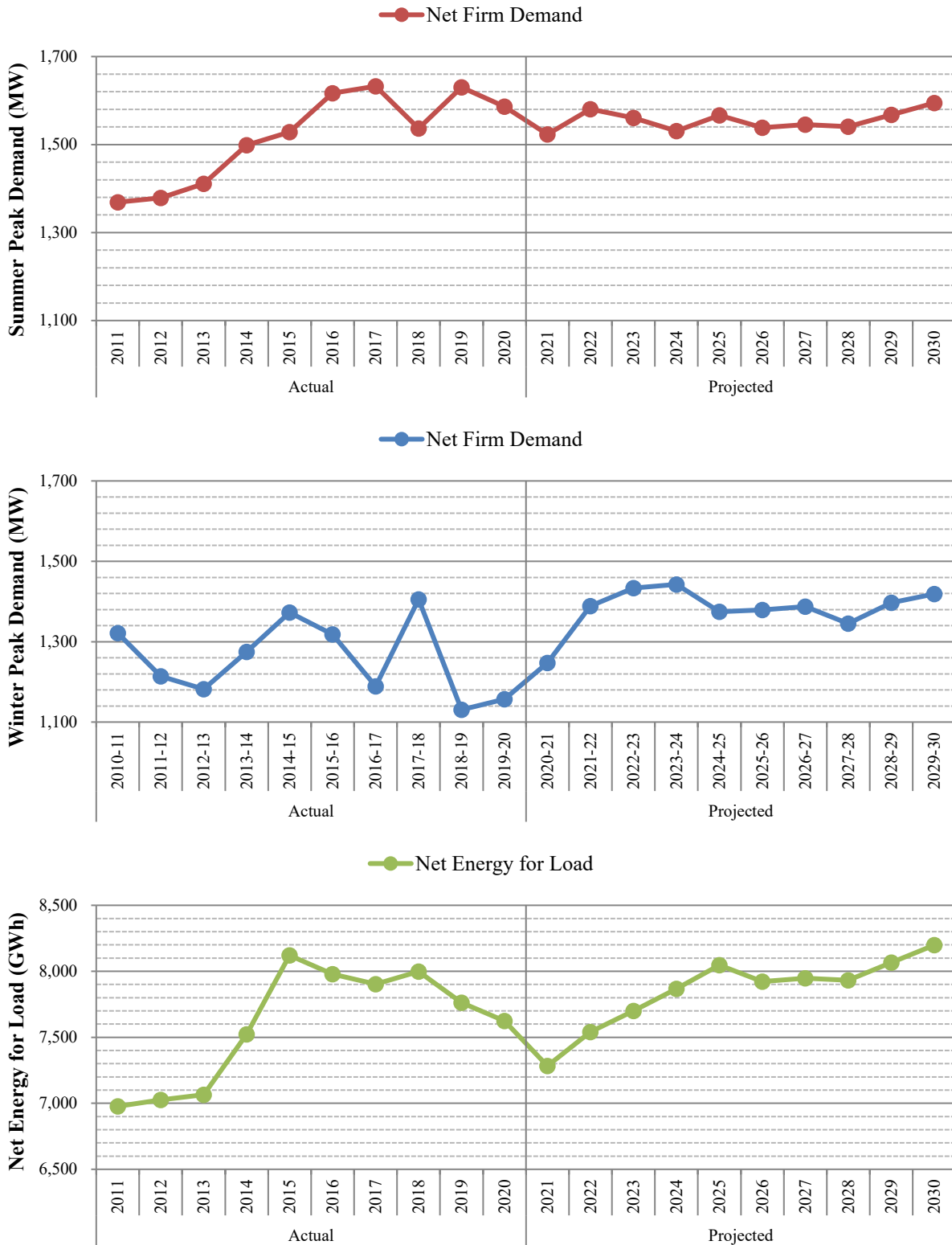
**Figure 41: OUC Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 42 show OUC’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. These graphs include the impact of the utility’s demand side management programs. While a municipal utility, OUC is subject to FEECA and currently offers energy efficiency programs to customers to reduce peak demand and annual energy consumption. In November 2019, the FPSC established demand side management goals for the FEECA utilities for the years 2020 through 2024. The utility’s 2021 Ten-Year Site Plan reflects these goals.

**Figure 42: OUC Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 24 shows OUC’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. In 2020, approximately 53 percent of OUC’s net energy for load was met with natural gas, while coal, the second most-used fuel, met 36 percent of the demand. By 2030, OUC projects an increase in renewable energy generation from 3 percent to 13 percent. While coal generation is expected to come to an end by 2027.

**Table 24: OUC Energy Generation by Fuel Type**

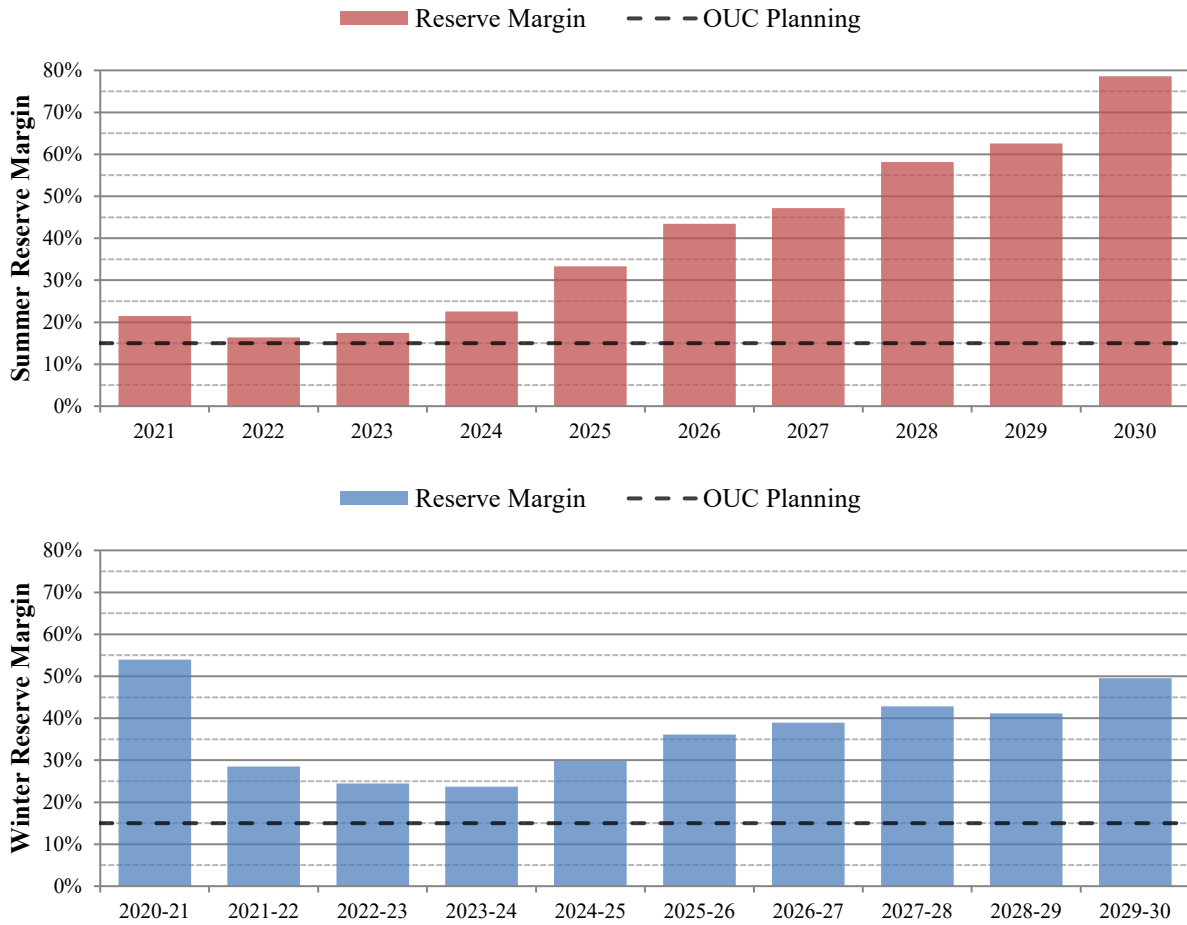
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	4,090	53.6%	6,584	80.3%
Coal	2,778	36.4%	0	0.0%
Nuclear	500	6.6%	587	7.2%
Oil	0	0.0%	0	0.0%
Renewable	258	3.4%	1,027	12.5%
Interchange	0	0.0%	0	0.0%
NUG & Other	0	0.0%	0	0.0%
<b>Total</b>	<b>7,626</b>		<b>8,198</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

OUC utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 43 displays the forecast planning reserve margin for OUC through the planning period for both seasons, including the impact of demand-side management programs. As shown in the figure, OUC’s generation needs are controlled by its summer peak demand until 2024.

**Figure 43: OUC Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

OUC plans no unit additions or retirements during the planning period, but is increasing its amount of purchased power through purchased power agreements with solar and battery energy storage developers. This is reflected in the increase in reserve margin, especially summer net firm demand where solar facilities provide more reliability benefits.



## Seminole Electric Cooperative (SEC)

SEC is a generation and transmission rural electric cooperative that serves its member cooperatives, and is collectively Florida's fourth largest utility. SEC's generation and member cooperatives are within the FRCC region, with member cooperatives located in central and north Florida. As a rural electric cooperative, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds SEC's 2021 Ten-Year Site Plan suitable for planning purposes.

### Load & Energy Forecasts

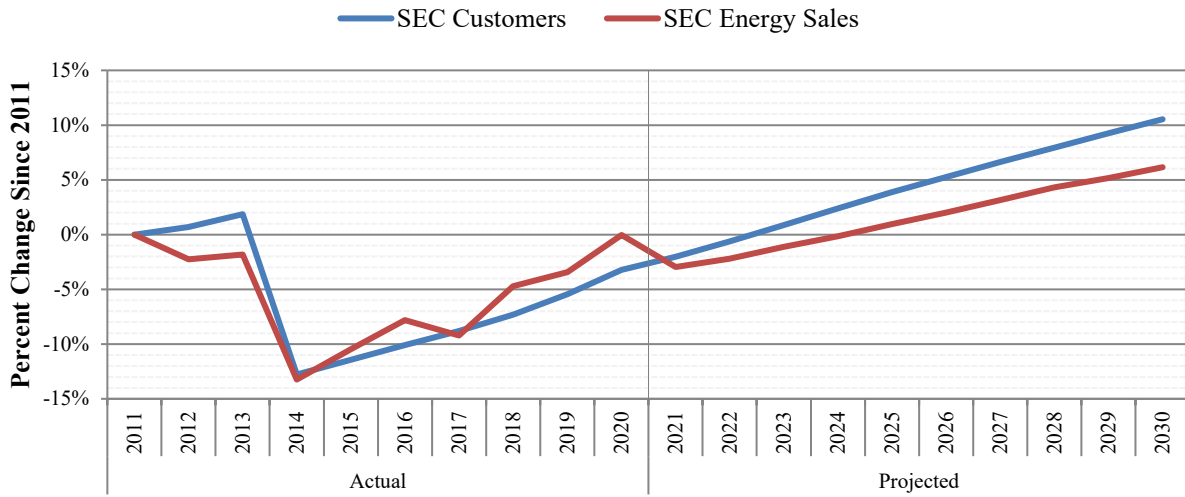
In 2020, SEC member cooperatives had approximately 821,738 customers and annual retail energy sales of 14,934 GWh or approximately 6.4 percent of Florida's annual retail energy sales. Figure 44 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. It shows that SEC's retail energy sales are anticipated to exceed its historic 2011 peak in 2025 during this planning period.

SEC's current Ten-Year Site Plan indicated that over the last 10 years, the utility members' aggregate customer base has decreased by 3.22 percent, compared to a 5.07 percent decrease shown in SEC's forecast last year for the 2010-2019 period. The negative 10-year customer growth rate is attributed to a substantial growth decline in 2014 when one member cooperative, Lee County Electric Cooperative, elected to end its membership with SEC. Over the last 10 years, the utility's retail sales have decreased by 0.03 percent, compared to 10.14 percent decrease indicated in the forecast last year for 2010-2019.

In 2019 and 2020, SEC's total customers grew 2.01 percent and 2.35 percent, respectively. The utility noted that in recent years its number of customers has grown at a faster rate than the State of Florida as a whole and that this trend is expected to continue. SEC indicated that the leading indicators for load growth are Florida's expanding economy and net migration prospects into the state, especially from "baby boomer" retirees. Customer growth and business activity are expected to drive system growth, while downward pressure is expected to come from flattening and declining residential end-use due to growth in efficient technologies, renewable generation, and alternative resources.

For the current 10-year forecast horizon, SEC is projecting an average annual growth rate in its customer base of 1.35 percent, and an average annual growth rate in its retail energy sales of 1.00 percent.

**Figure 44: SEC Growth**

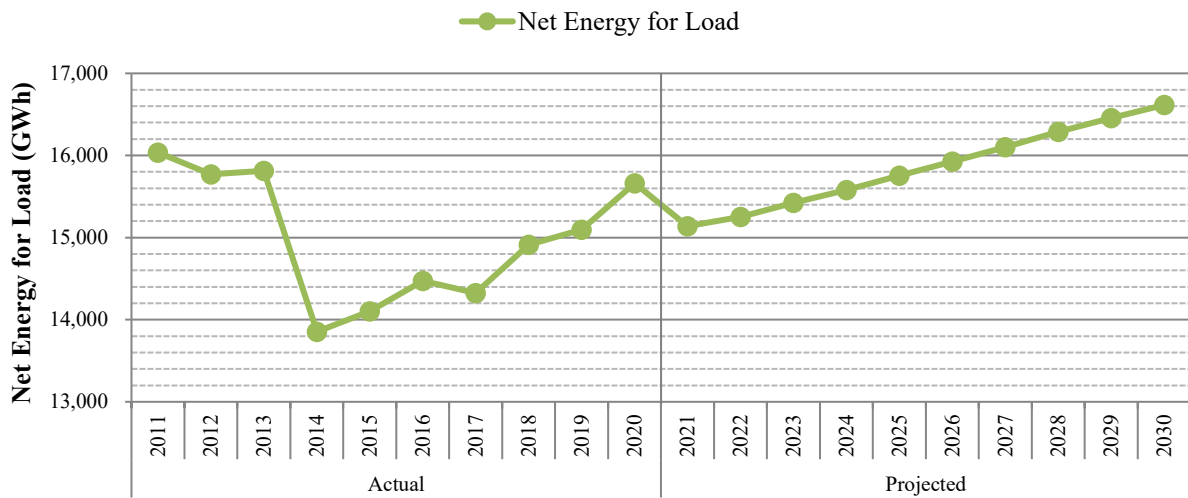
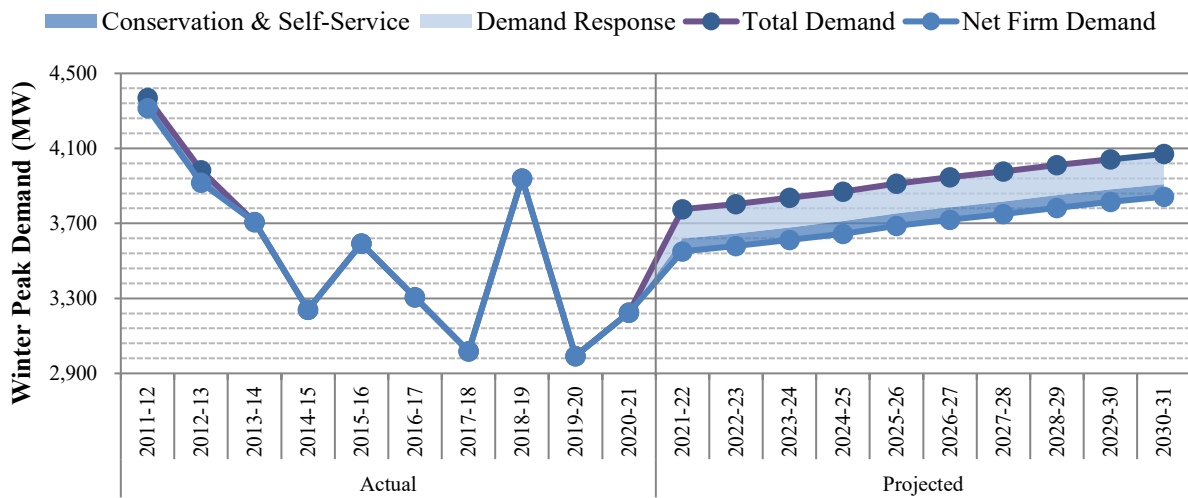
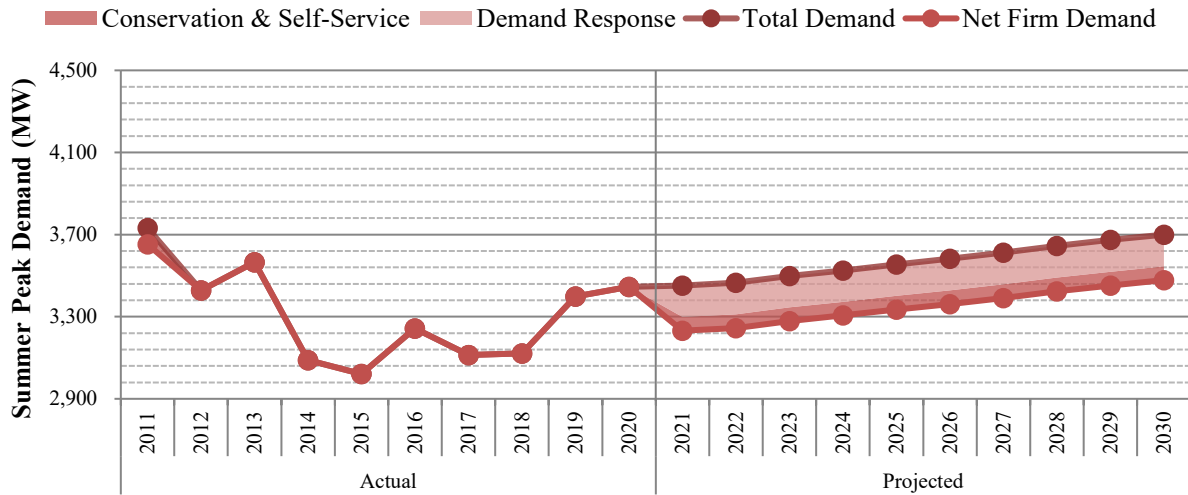


Source: 2021 Ten-Year Site Plan

The three graphs in Figure 45 show SEC’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. As SEC is a generation and transmission company, it does not directly engage in energy efficiency or demand response programs. Member cooperatives do offer demand-side management programs, the impacts of which are included in Figure 45.



**Figure 45: SEC Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 25 shows SEC’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. In 2020, SEC used coal as its primary source of fuel, while natural gas was the second most used fuel. By 2030 natural gas usage is expected to become the primary fuel source.

**Table 25: SEC Energy Generation by Fuel Type**

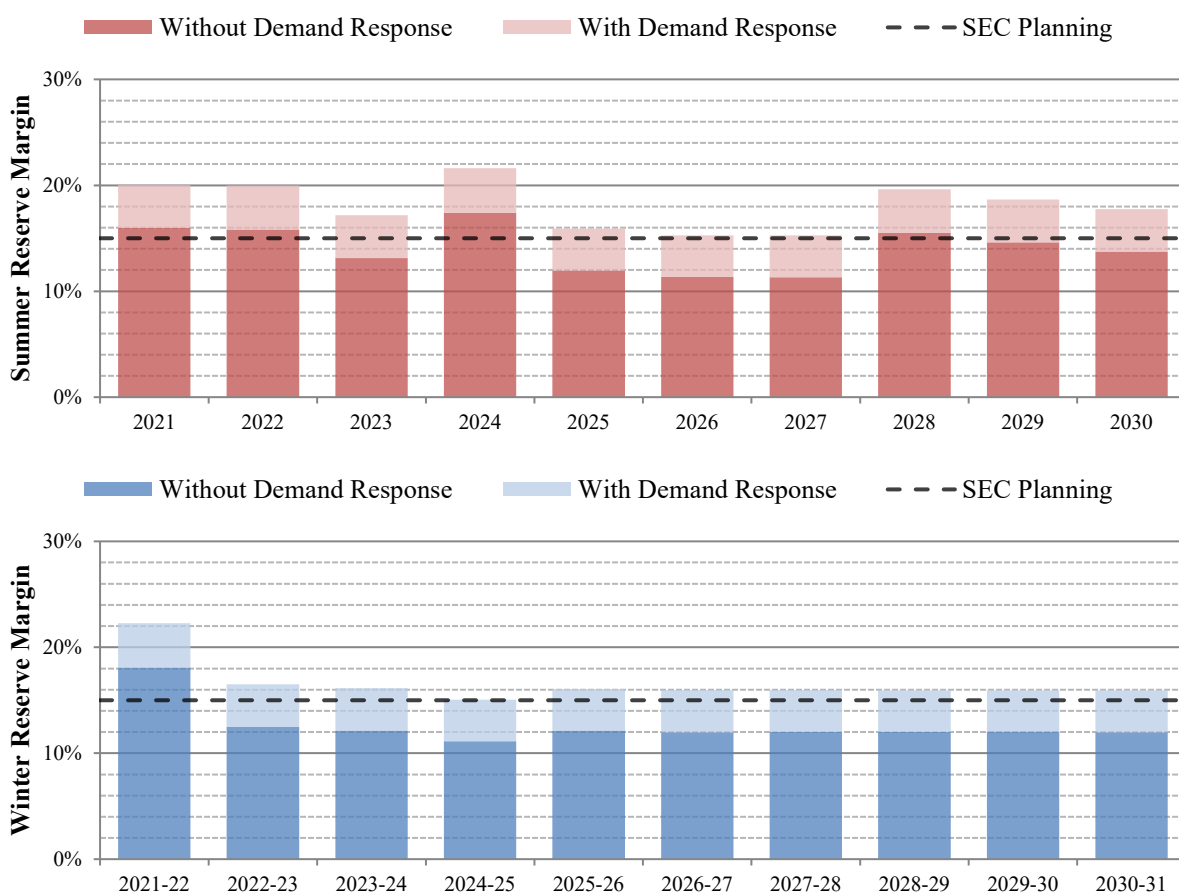
Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	4,421	28.3%	13,746	82.7%
Coal	6,588	42.2%	1,261	7.6%
Nuclear	0	0.0%	0	0.0%
Oil	21	0.1%	3	0.0%
Renewable	588	3.8%	767	4.6%
Interchange	4,004	25.6%	759	4.6%
NUG & Other	0	0.0%	79	0.5%
<b>Total</b>	<b>15,622</b>		<b>16,615</b>	

Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

SEC utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 46 displays the forecast planning reserve margin for SEC through the planning period for both seasons, with and without the use of demand response. Member cooperatives allow SEC to coordinate demand response resources to maintain reliability. As shown in the figure, SEC’s generation needs are determined by winter peak demand more often than summer peak demand during the planning period.

**Figure 46: SEC Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

### Generation Resources

SEC plans to retire one unit and add two units during the planning period, as described in Table 26. On December 21, 2017, SEC filed a need determination with the Commission for the Seminole CC Facility which was granted on May 25, 2018.<sup>13</sup> Consistent with its need determination filing, SEC plans to retire one of its coal-fired SGS units in 2022, and the Seminole CC Facility is expected to be in-service by 2022. A second unnamed unit is forecast to come online in 2030.

<sup>13</sup> Order No. PSC-2018-0262-FOF-EC, issued May 25, 2018, in Docket No. 20170266-EC, *In re: Petition to determine need for Seminole combined cycle facility, by Seminole Electric Cooperative, Inc.*

**Table 26: SEC Generation Resource Changes**

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Notes
			Sum	
<b>Retiring Units</b>				
2022	SGS Unit 1 or 2	BIT – ST	634	Unit choice for retirement pending. Larger MW shown.
<b>Total Retirements</b>			<b>634</b>	
<b>New Units</b>				
2022	Seminole CC Facility	NG – CC	1,099	Docket No. 20170266-EC
2030	Unnamed Reciprocating Unit	NG – IC	92	
<b>Total New Units</b>			<b>1,191</b>	
<b>Net Additions</b>			<b>557</b>	

Source: 2021 Ten-Year Site Plan

## City of Tallahassee Utilities (TAL)

TAL is a municipal utility and the second smallest electric utility which files a Ten-Year Site Plan. The utility's service territory is within the FRCC region and primarily consists of the City of Tallahassee and surrounding areas. As a municipal utility, the Commission's regulatory authority is limited to safety, rate structure, territorial boundaries, bulk power supply, operations, and planning. Pursuant to Section 186.801(2), F.S., the Commission finds TAL's 2021 Ten-Year Site Plan suitable for planning purposes.

### **Load & Energy Forecasts**

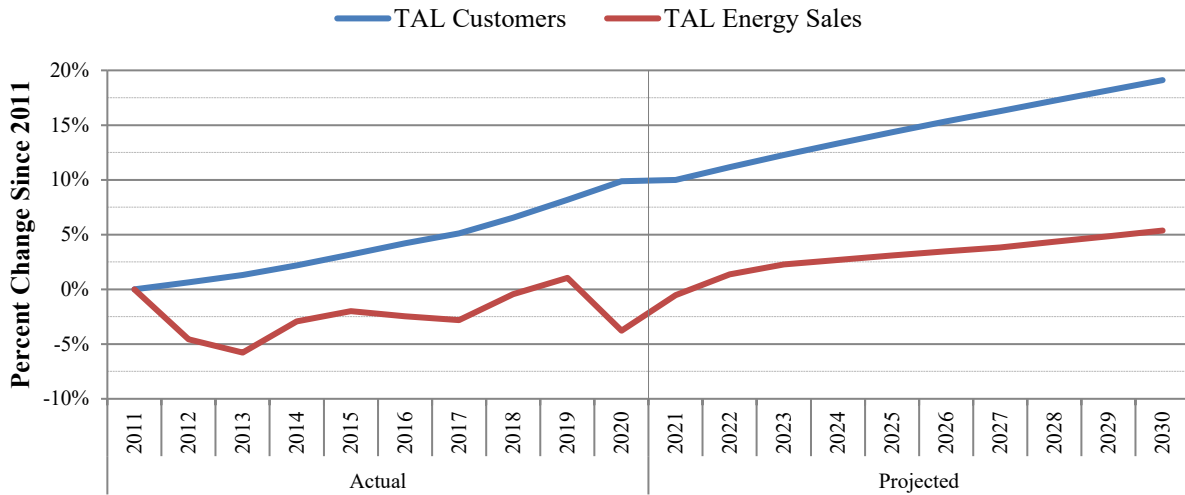
In 2020, TAL had approximately 125,478 customers and annual retail energy sales of 2,607 GWh or approximately 1.1 percent of Florida's annual retail energy sales. Figure 47 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2011. Over the last 10 years, TAL's customer base has increased by 9.86 percent, while retail sales have decreased by 3.79 percent.

TAL's 2021 customer forecast reflects projected growth rates for population, household counts, employment, and average income over 2021-2031 that are comparable to those from the 2020 Ten-Year Site Plan. As a result of the expected continuation of favorable economic conditions, the utility expects its residential and commercial counts to continue growing at rates of 0.9 per cent and 1.1 percent per year, respectively.

The utility's residential electricity use per customer has been relatively stable since the end of the 2007-08 recession. Its commercial use per customer has continued to decline albeit at a slower rate, and has been particularly impacted by the COVID-19 Pandemic. This is believed to be driven primarily from the following factors: (i) increases in end use efficiency standards, particularly for HVAC systems, that have been filtering into the stock of equipment through replacements and new builds and are believed to be nearly fully diffused into the current residential stock; (ii) significant decreases in the price of electricity on TAL's system since 2009, after a period of increase of a similar magnitude resulting primarily from the run-up in the cost of natural gas preceding the opening of shale gas resources in the U.S.; and (iii) the improvement in economic conditions since the end of the 2007-08 recession.

TAL's load forecast reflects continued decreases in use per customer for the residential class, which offsets, to some degree, robust growth in residential customer counts and essentially flat growth in average use per customer for the commercial classes. The forecasted decrease in residential average use is driven partially from a greater focus of TAL's demand side management and energy efficiency programs on that class. Over the current 10-year forecast horizon, TAL is projecting an average annual growth of 0.89 percent in its customer base, and a growth of 0.64 percent in its retail energy sales.

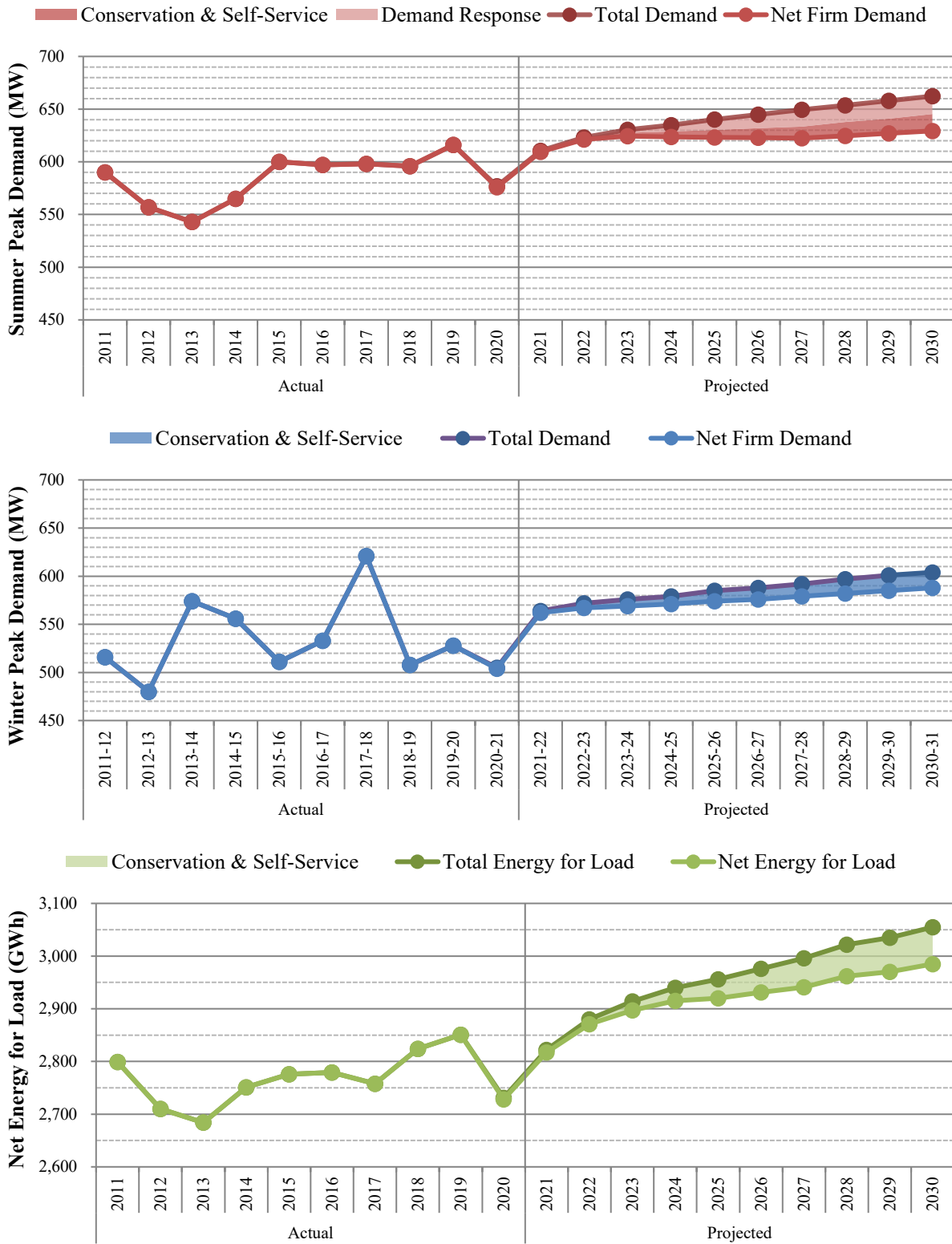
**Figure 47: TAL Growth**



Source: 2021 Ten-Year Site Plan

The three graphs in Figure 48 shows TAL’s seasonal peak demand and net energy for load for the historic years of 2011 through 2020 and forecast years 2021 through 2030. These graphs include the impact of demand-side management, and for future years assume that all available demand response resources will be activated during the seasonal peak. TAL offers energy efficiency and demand response programs to customers to reduce peak demand and annual energy consumption. Currently TAL only offers demand response programs targeting appliances that contribute to summer peak, and therefore have no effect upon winter peak.

**Figure 48: TAL Demand and Energy Forecasts**



Source: 2021 Ten-Year Site Plan and Data Responses

## Fuel Diversity

Table 27 shows TAL’s actual net energy for load by fuel type as of 2020 and the projected fuel mix for 2030. TAL relies almost exclusively on natural gas for its generation, excluding some purchases from other utilities and qualifying facilities. Natural gas is anticipated to remain the primary fuel source on the system.

**Table 27: TAL Energy Generation by Fuel Type**

Fuel Type	Net Energy for Load			
	2020		2030	
	GWh	%	GWh	%
Natural Gas	2666	97.7%	3,021	101.2%
Coal	0	0.0%	0	0.0%
Nuclear	0	0.0%	0	0.0%
Oil	1	0.0%	0	0.0%
Renewable	113	4.1%	116	3.9%
Interchange	-51	-1.9%	(153)	-5.1%
NUG & Other	0	0.0%	0	0.0%
<b>Total</b>	<b>2,729</b>		<b>2,985</b>	

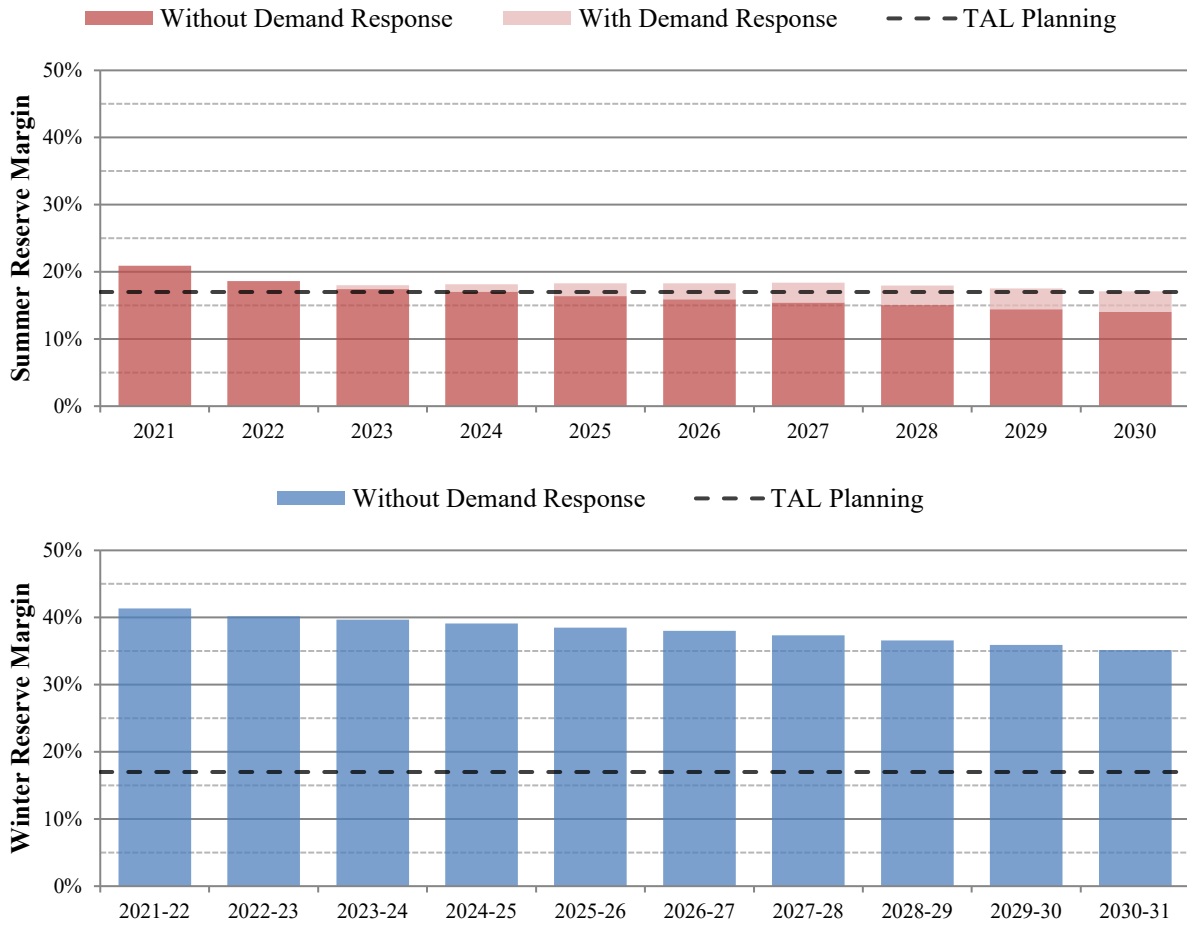
Source: 2021 Ten-Year Site Plan and Data Responses

## Reliability Requirements

TAL utilizes a 17 percent planning reserve margin criterion for seasonal peak demand. Figure 49 displays the forecast planning reserve margin for TAL through the planning period for both seasons, with and without the use of demand response. As discussed above, TAL only offers demand response programs applicable to the summer peak. As shown in the figure, TAL’s generation needs are controlled by its summer peak throughout the planning period.



**Figure 49: TAL Reserve Margin Forecast**



Source: 2021 Ten-Year Site Plan

**Generation Resources**

TAL plans no unit additions or retirements during the planning period.

# APPENDIX A

REVIEW OF THE  
**2021 TEN-YEAR SITE PLANS**  
OF FLORIDA'S ELECTRIC UTILITIES



FLORIDA  
PUBLIC  
SERVICE  
COMMISSION

OCTOBER 2021



## **Ten-Year Site Plan Comments**

---

### **State Agencies**

- Department of Economic Opportunity.....1
- Department of Environmental Protection.....13
- Fish and Wildlife Conservation Commission....17

### **Regional Planning Councils**

- Treasure Coast Regional Planning Council.....21

### **Water Management Districts**

- St. Johns River Water Management District....37

### **Local Governments**

- Pinellas County.....43
- Santa Rosa County.....49

### **Environmental Groups**

- Vote Solar.....53

### **Florida Citizens**

- Mr. Nathan A. Skop.....71



State Agencies

Department of Economic Opportunity



**Ron DeSantis**  
GOVERNOR



**Dane Eagle**  
SECRETARY

August 2, 2021

Mr. Donald Phillips  
Engineering Specialist  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

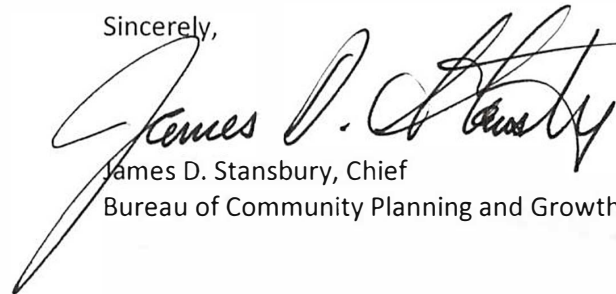
RE: Review of the 2021 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips:

At your request, we have reviewed the 2021 Ten-Year Site Plans of the electric utilities. The Department of Economic Opportunity's review focused on the potential and preferred sites for future power generation, and the compatibility of those sites with the applicable local comprehensive plan, including the adopted future land use map. Please see our enclosed comments.

Should you have any questions regarding these comments, please contact Scott Rogers, Planning Analyst, at (850) 717-8510, or by email at [scott.rogers@deo.myflorida.com](mailto:scott.rogers@deo.myflorida.com).

Sincerely,



James D. Stansbury, Chief  
Bureau of Community Planning and Growth

JDS/sr

Enclosure: DEO Review Comments

Florida Department of Economic Opportunity | Caldwell Building | 107 E. Madison Street | Tallahassee, FL 32399  
850.245.7105 | [www.FloridaJobs.org](http://www.FloridaJobs.org)  
[www.twitter.com/FLDEO](https://www.twitter.com/FLDEO) | [www.facebook.com/FLDEO](https://www.facebook.com/FLDEO)

An equal opportunity employer/program. Auxiliary aids and service are available upon request to individuals with disabilities. All voice telephone numbers on this document may be reached by persons using TTY/TTD equipment via the Florida Relay Service at 711.



## Florida Department of Economic Opportunity 2021 Ten-Year Site Plan Review Comments

The Department's review focused on potential and preferred sites for future power generation, and the compatibility of those sites with the applicable local government comprehensive plan, including the adopted future land use map. In addition, the Department's comments provide information regarding the local zoning designation when the applicable future land use map designation for a site does not expressly address whether electric power generation facilities are allowed or prohibited. Nine utilities (Duke Energy Florida, Florida Municipal Power Agency, Florida Power and Light Company, Gainesville Regional Utilities, Gulf Power Company, Lakeland Electric, Orlando Utilities Commission, Seminole Electric Cooperative, and Tampa Electric Company) have identified a total of 67 potential or preferred sites for future power generation in their Ten-Year Site Plan (TYSP). Potential sites are defined in Rule 25-22.070, Florida Administrative Code (F.A.C.), as "sites within the state that an electric utility is considering for possible location of a power plant, a power plant alteration, or an addition resulting in an increase in generating capacity." Preferred sites are defined in Rule 25-22.070, F.A.C., as "sites within the state on which an electric utility intends to construct a power plant, a power plant alteration, or an addition resulting in an increase in generating capacity."

### 1. Duke Energy Florida

The Duke Energy Florida (DEF) TYSP identifies seven preferred sites (listed below) to increase power generating capacity (photovoltaic solar power generation). For these sites, the TYSP does not include maps of a suitable scale that show the location of each site in relation to an identified nearby or surrounding roadway network in order to assist the reader in understanding the location and suitability of the sites and to assist in determining the comprehensive plan future land use map designations.

A. Bay Trail Solar Site: The Bay Trail Solar site is located on approximately 600 acres in Citrus County. The TYSP states that the site is located on limestone mining lands and that DEF has received the necessary permit approvals from Citrus County.

B. Charlie Creek Solar Site: The Charlie Creek Solar site is located on approximately 650 acres in Hardee County. The TYSP states that the site is located on cattle grazing land and citrus groves and that DEF has received the necessary permit approvals from Hardee County.

C. Duette Solar Site: The Duette Solar site is located on approximately 600 acres in Manatee County. The TYSP states that the site is located on former citrus grove lands and that DEF has received the necessary permit approvals from Manatee County.

D. Fort Green Solar Site: The Fort Green Solar site is located on approximately 600 acres in Hardee County. The TYSP states that the site is located on reclaimed phosphate mining land.

E. Sandy Creek Solar Site: The Sandy Creek Solar site is located on approximately 650 acres in Bay County. The TYSP states that the site is located on former cattle grazing and timber lands and that DEF has received the necessary conditional permit approvals from Bay County.

F. Santa Fe Solar Site: The Santa Fe Solar site is located on 607 acres in Columbia County. The TYSP states that the site is located on former agricultural and cattle grazing lands and that DEF has received the necessary special use permit from Columbia County.

G. Twin Rivers Solar Site: The Twin Rivers Solar site is located on 515 acres in Hamilton County. The TYSP states that the site is located on former agricultural and timber lands and that DEF has received the necessary special use permits from Hamilton County.

## **2. Florida Municipal Power Agency**

The Florida Municipal Power Agency TYSP identifies three potential sites for the increase in power generating capacity: (1) Cane Island Power Park; (2) Treasure Coast Energy Center; and (3) Stock Island.

A. Cane Island Power Park Site: The Cane Island Power Park (CIPP) site is located on 1,027 acres in rural northwest Osceola County, approximately one mile northwest of Intercession City. The site contains existing power generation facilities. The Osceola County Comprehensive Plan Future Land Use Map designates the site as “Rural/Agriculture”, which allows electric utility facilities.

B. Treasure Coast Energy Center Site: The Treasure Coast Energy Center site is located on 69 acres in the Midway Industrial Park in the City of Fort Pierce. The site contains existing power generation facilities. The City of Fort Pierce Comprehensive Plan Future Land Use Map designates the site as “Institutional”, which allows an electric generating plant.

C. Stock Island Power Plant Site: The Stock Island Power Plant site is located on Stock Island near Key West, and the site contains existing power generation facilities. The Monroe County Comprehensive Plan Future Land Use Map designates the Stock Island Power Plant site as “Public Facilities”, which allows electric generation plants.

## **3. Florida Power and Light Company and Gulf Power Company**

The Florida Power and Light Company (FPL) and Gulf Power Company submitted a combined TYSP because both companies are now owned by NextEra Energy, Inc., and NextEra Energy’s plan is to integrate FPL and Gulf Power into a single electric operating system effective in January 2022. The TYSP identifies twenty-nine preferred sites and ten potential sites for the increase of power generating capacity.

A. The TYSP identifies the following as preferred sites:

1. **Anhinga Solar Energy Center Site:** The Anhinga Solar Energy Center site is located on 494 acres in Clay County. The Clay County Comprehensive Plan Future Land Use Map designates the site predominantly as “Agriculture” and “Agriculture/Residential” and a smaller portion as “Commercial” and “Conservation.” The site is designated as “Agricultural” and “Agricultural/Residential” on the Clay County Zoning Map. Solar power generation may be permitted as a conditional use on the site through the Clay County Land Development Code.

2. **Apalachee Solar Energy Center Site:** The Apalachee Solar Energy Center site is located on 596 acres in Jackson County. The Jackson County Comprehensive Plan Future Land Use Map designates the site as “Agricultural-1.” Electrical power generating facilities are allowable as a conditional use within the Agricultural-1 future land use category.

3. **Blackwater River Solar Energy Center Site:** The Blackwater River Solar Energy Center site is located on 366 acres in Santa Rosa County. The Santa Rosa County Comprehensive Plan Future Land Use Map designates the site as “Industrial”, which allows all uses that are industrial in nature and public and private utilities.

4. **Bluefield Preserve Solar Energy Center Site:** The Bluefield Preserve Solar Energy Center site is located on 592 acres in St. Lucie County. The site is designated as “Agricultural-5” on the St. Lucie County Comprehensive Plan Future Land Use Map and “Agricultural-5” on the St. Lucie County Zoning Atlas. A solar generation station/plant may be allowed as a conditional use in the Agricultural-5 zoning district.

5. **Blue Springs Solar Energy Center Site:** The Blue Springs Solar Energy Center site is located on 444 acres in Jackson County. The Jackson County Comprehensive Plan Future Land Use Map designates the site as “Agriculture-2”, and electric power generating facilities are allowed as a conditional use.

6. **Cavendish Solar Energy Center Site:** The Cavendish Solar Energy Center site is located on 930 acres in Okeechobee County. The Okeechobee County Comprehensive Plan Future Land Use Map designates the site as “Agriculture”, which allows power generation.

7. **Dania Beach Clean Energy Center Unit 7 Site:** The Dania Beach Clean Energy Center Unit 7 site (134 acres) is located on the existing Lauderdale Plant property (392 acres) in Broward County within the City of Dania Beach and the City of Hollywood. The site contains existing power generating facilities. The Broward County Comprehensive Plan is applicable to both the unincorporated area of the County and the land within the incorporated municipalities of the County. The Broward County Comprehensive Plan Future Land Use Map designates the site as “Electrical Generating Facility”, which allows electrical power plants. The City of Hollywood Comprehensive Plan Future Land Use Map designates the portion of the site within the City as “Utilities” and “Industrial”, and the “Utilities” category allows electrical power plants and the “Industrial” category allows utility uses. The City of Dania Beach Comprehensive Plan Future

Land Use Map designates the portion of the site within the City as “Electrical Generation Facilities”, which allows electrical power plants.

8. Discovery Solar Energy Center Site: The Discovery Solar Energy Center site is located on 491 acres within the John F. Kennedy Space Center in Brevard County. The site is owned by the United States Government and is not subject to the Brevard County Comprehensive Plan.

9. Echo River Battery Storage Center Site: The Echo River Battery Storage Center site is located on 4.31 acres in Suwannee County. The Suwannee County Comprehensive Plan Future Land Use Map designates the 4.31 acre site as “Agriculture-1.” Electric generating facilities may be allowed as a special exception use in the Agriculture-1 future land use category.

10. Elder Branch Solar Energy Center Site: The Elder Branch Solar Energy Center site is located on 590 acres in Manatee County. The Manatee County Comprehensive Plan Future Land Use Map designates the site as “Agriculture/Rural”, which allows utility use, including alternative energy generation facilities (a facility that utilizes Photovoltaic Solar Power to generate electricity).

11. Everglades Solar Energy Center Site: The Everglades Solar Energy Center site is located on 388 acres in Miami-Dade County. The Miami-Dade County Comprehensive Plan Future Land Use Map designates the site as “Agriculture”, which allows utility uses that are compatible with agriculture and rural residential character. The Miami-Dade County Zoning Map designates the site as “General Use”, which allows an electric power plant to be approved upon public hearing.

12. Fort Drum Solar Energy Center Site: The Fort Drum Solar Energy Center site is located on 930 acres in northeast Okeechobee County. The Okeechobee County Comprehensive Plan Future Land Use Map designates the site as “Agriculture”, which allows power generation.

13. Gulf Clean Energy Center Unit 8 Site: The Gulf Clean Energy Center Unit 8 site is located on 58 acres in Escambia County (approximately ten miles north of the City of Pensacola) within the existing Plant Crist site, which contains existing power generation facilities. The Escambia County Comprehensive Plan Future Land Use Map designates the site as “Industrial”, which allows electric power generation facilities.

14. Ghost Orchid Solar Energy Center Site: The Ghost Orchid Solar Energy Center site is located on 535 acres in Hendry County. The Hendry County Comprehensive Plan Future Land Use Map designates the site as “Electrical Generating Facility”, which allows electric power generation facilities (including solar power generation).

15. Immokalee Solar Energy Center Site: The Immokalee Solar Energy Center site is located on 548 acres in Collier County. The Collier County Comprehensive Plan Future Land Use Map designates the site as “Agricultural/Rural Mixed Use District”, which allows utility facilities. Collier County Board of County Commissioners approved the Immokalee Solar Energy Center in July 2021.

16. Manatee Battery Storage Center Site: The Manatee Energy Storage Center site is located on 40 acres in Manatee County, and the site is part of a larger site that contains existing power generation facilities. The Manatee County Comprehensive Plan Future Land Use Map designates the site as "Public/Semi-Public-1", which allows utility use, including alternative energy generation facilities (may include equipment that is directly involved in the storage and transmission of electricity). ??check see if same one as here

17. Orange Blossom Solar Energy Center Site: The Orange Blossom Solar Energy Center site is located on 607 acres in Indian River County. The Indian River County Comprehensive Plan Future Land Use Map designates the site as "Agricultural-2", which allows public and private utilities.

18. Sabal Palm Solar Energy Center Site: The Sabal Palm Solar Energy Center site is located on 646 acres in Palm Beach County. The Palm Beach County Comprehensive Plan Future Land Use Map designates the site as "Rural Residential", which allows electrical power generation facilities utilizing solar energy.

19. Sawgrass Solar Energy Center Site: The Sawgrass Solar Energy Center site is located on 603 acres in Hendry County. The Hendry County Comprehensive Plan Future Land Use Map designates the site as "Electrical Generating Facility", which allows electric power generation facilities (including solar power generation).

20. Sundew Solar Energy Center Site: The Sundew Solar Energy Center site is located on 473 acres in St. Lucie County. The site is designated as "Agricultural-5" on the St. Lucie County Comprehensive Plan Future Land Use Map and "Agricultural-5" on the St. Lucie County Zoning Atlas. A solar generation station/plant may be allowed as a conditional use in the Agricultural-5 zoning district.

21. Sunshine Gateway Battery Storage Center Site: The Sunshine Gateway Battery Storage Center site is located on 3 acres in Columbia County. The Columbia County Comprehensive Plan Future Land Use Map designates the site as "Agriculture-3" and "Agriculture-3" on the Columbia County Zoning Atlas. A solar power generation plant is allowed as a special exception use in the Agriculture-3 zoning district.

22. Turkey Point Units 6 and 7 Site: The Turkey Point Plant site is located on approximately 3,300 acres in the southern portion of Miami-Dade County. The site contains existing power generating facilities. The Miami-Dade County Comprehensive Plan Future Land Use Map designates the site as "Institutions, Utilities, and Communications" which allows power generation and "Environmental Protection Area."

23. White Tail Solar Energy Center Site: The White Tail Solar Energy Center site is located on 601 acres in Martin County. The site is designated as "Agriculture" on the Martin County Comprehensive Plan Future Land Use Map and "Agricultural-2 District" on the Martin County

Zoning Atlas. Solar energy facilities (solar farms) are allowed as a permitted use in the Agriculture future land use category and Agricultural-2 District.

24. Willow Solar Energy Center Site: The Willow Solar Energy Center site is located on 812 acres in Manatee County. The Manatee County Comprehensive Plan Future Land Use Map designates the site as “Agriculture/Rural”, which allows utility use, including alternative energy generation facilities (a facility that utilizes photovoltaic solar power to generate electricity).

25. Other Preferred Sites: For the sites identified in the table below, the TYSP does not include maps of suitable scale that show the location of each site in relation to an identified nearby or surrounding roadway network. For these sites, it would be helpful to readers if the TYSP included maps of a suitable scale that show the location of each site in relation to an identified nearby or surrounding roadway network in order to assist the reader in understanding the location and suitability of the sites and to assist in determining the comprehensive plan future land use map designations.

Name	Site Area	County
Chipola River Solar Energy Center	575	Calhoun County
Cotton Creek Solar Energy Center	645	Escambia County
First City Solar Energy Center	458	Escambia County
Flowers Creek Solar Energy Center	689	Calhoun County
Grove Solar Energy Center	574	Indian River County

B. The TYSP identifies the following as potential sites:

Name	County
Chautauqua Solar Energy Center Site	Walton
Cypress Pond Solar Energy Center Site	Washington
Etonia Creek Solar Energy Center Site	Putnam
Little Pine Solar Energy Center Site	Baker
Pink Trail Solar Energy Center Site	St. Lucie
Shirer Branch Solar Energy Center Site	Calhoun
Terrill Creek Solar Energy Center Site	Clay
Timber Trail Solar Energy Center Site	Putnam
Wild Azalea Solar Energy Center Site	Gadsden
Wild Quail Solar Energy Center Site	Walton

For the ten potential sites identified in the table above, the TYSP does not: (1) state the size of the site in number of acres; and (2) include maps of suitable scale that show the location of each site in relation to an identified nearby or surrounding roadway network. For these potential sites, it would be helpful to readers if the TYSP identified the amount of acres of each site and included maps of a suitable scale that show the location of each site in relation to an

identified nearby or surrounding roadway network in order to assist the reader in understanding the location and suitability of the sites and to assist in determining the comprehensive plan future land use map designations.

#### **4. Gainesville Regional Utilities**

The Gainesville Regional Utilities TYSP identifies one preferred site (Deerhaven Generating Station site) for the increase in power generating capacity.

A. Deerhaven Generating Station Site: The Deerhaven Generating Station site is located on 3,474 acres within the City of Gainesville, and the site contains an existing power generation facility. The City of Gainesville Comprehensive Plan Future Land Use Map designates the site as “Public and Institutional Facilities”, which allows utilities.

#### **5. Lakeland Electric**

The Lakeland Electric TYSP identifies one preferred site (McIntosh Power Plant) for the increase in power generating capacity.

A. McIntosh Power Plant Site: The McIntosh Power Plant site is located on 530 acres in the City of Lakeland, and the site contains an existing power generation facility. The City of Lakeland Comprehensive Plan Future Land Use Map designates the site as “Industrial”, and electric power generating facilities may be allowed as a conditional use through the Land Development Code.

#### **6. Orlando Utilities Commission**

The Orlando Utilities Commission (OUC) TYSP states that OUC’s existing Stanton Energy Center and Indian River Plant sites may accommodate future generating unit additions. It would be helpful to readers if the OUC TYSP (Section 10 Environmental and Land Use Information) included a map showing the location of these sites in relation to the nearby or surrounding roadway network.

A. Stanton Energy Center Site: The Stanton Energy Center site is located on 3,280 acres in unincorporated Orange County, approximately 12 miles southeast of the City of Orlando, and contains existing power generation facilities. The Orange County Comprehensive Plan Future Land Use Map designates the site as Institutional, which allows utilities and public facilities.

B. Indian River Plant Site: The Indian River Plant site is located on 160 acres in unincorporated Brevard County, south of the City of Titusville, and contains existing power generation facilities.

The Brevard County Comprehensive Plan Future Land Use Map designates the site as Public Facility, which allows government managed utilities.

## **7. Seminole Electric Cooperative**

The Seminole Electric Cooperative TYSP identifies one potential site (Gilchrist site) and one preferred site (Seminole Generating Station site) for the increase in power generating capacity.

A. Gilchrist Site: The Gilchrist site is located on 520 acres in the central portion of Gilchrist County, approximately two miles northeast of the City of Bell. The site does not contain existing power generation facilities. Much of the site has been used for silviculture (pine plantation) and consists of large tracts of planted longleaf and slash pine community, and the site contains a limited amount of wetlands (10.1 acres). The site is designated Agriculture-2 on the adopted Future Land Use Map of the Gilchrist County Comprehensive Plan. Electric generating facilities are not identified as an allowable land use within the Agriculture-2 future land use category; however, solar farms are an allowable land use within the Agriculture-2 future land use category by special use permit.

B. Seminole Generating Station Site: The Seminole Generating Station site is located on 1,996 acres in unincorporated Putnam County, approximately five miles north of the City of Palatka. The site contains existing power generation facilities. The site is designated as Public Facilities on the adopted Future Land Use Map of the Putnam County Comprehensive Plan. Power generation facilities are an allowable use within the Public Facilities future land use category.

## **8. Tampa Electric Company**

The Tampa Electric Company TYSP identifies twelve preferred sites for the increase in power generating capacity.

1. Bayside Power Station Site: The Bayside (H.L. Culbreath) Power Station site is located in unincorporated Hillsborough County and contains existing power generation facilities. The site is designated mostly as "Heavy Industrial" with a smaller area as "Light Industrial" on the adopted Future Land Use Map of the Hillsborough County Comprehensive Plan. Electric generation plants are an allowed use in the Heavy Industrial future land use category.

2. Big Bend Power Station Site: The Big Bend Power Station site is located in unincorporated Hillsborough County and contains existing power generation facilities. The site is designated as "Heavy Industrial," "Light Industrial," and "Environmentally Sensitive Areas" on the adopted Future Land Use Map of the Hillsborough County Comprehensive Plan. Electric generation plants are an allowed use only in the Heavy Industrial future land use category. The "Environmentally Sensitive Areas" protect wetlands and significant wildlife habitat along the southern portion of the site.



3. Durrance Solar Site: The Durrance Solar site is located on 473 acres near Bradley Junction in unincorporated Polk County. The site is designated as “Agriculture/Residential Rural” on the Polk County Comprehensive Plan Future Land Use Map. Solar electric generating facilities are allowed as a conditional use in the Agriculture/Residential Rural future land use category.

4. Mountain View Solar Site: The Mountain View Solar site is located on 345 acres in northeastern Pasco County. The Pasco County Comprehensive Plan Future Land Use Map designates the site with the following future land use categories: (1) Residential-1; (2) Residential-3; and (3) Agricultural/Rural. Private electric public utilities (includes power plants) may be permitted in these future land use categories.

5. Other Sites: The Tampa Electric Company TYSP lists the following sites for the increase in power generating capacity but does not include maps of a suitable scale that show the specific location of these sites in relation to the nearby or surrounding roadway network:

<b>Name</b>	<b>Site Area</b>	<b>County</b>
Alafia Solar Site	408 acres	Polk
Dover Solar Site	unspecified	Hillsborough
Jamison Solar Site	695 acres	Polk
Laurel Oaks Solar Site	515 acres	Hillsborough
Magnolia Solar Site	577 acres	Hillsborough/Polk
Palm River Dairy Solar Site	575 acres	Pasco
Riverside Solar Site	546 acres	Hillsborough
Wheeler Solar Site	464 acres	Polk

For these sites, it would be helpful to readers if the Tampa Electric Company TYSP (Chapter VI: Environmental and Land Use Information) included maps of a suitable scale that show the location of each site in relation to an identified nearby or surrounding roadway network in order to assist the reader in understanding the location and suitability of the sites and to assist in determining the comprehensive plan future land use map designations.

State Agencies

Department of Environmental Protection



From: DeHaven, Callie <Callie.Dehaven@dep.state.fl.us>  
Sent: Tuesday, May 04, 2021 11:20 AM  
To: Patti Zellner  
Cc: Laura King; Phillip Ellis; Donald Phillips; Damian Kistner; Richardson, Brad; Fleener, Andrew  
Subject: RE: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (004)

Hi Patti. Thank you. Message with attachment received.

Callie

Callie DeHaven  
Director, Division of State Lands  
Florida Department of Environmental Protection  
Callie.DeHaven@FloridaDEP.gov  
Office: 850-245-2025

From: Patti Zellner <PZELLNER@PSC.STATE.FL.US>  
Sent: Tuesday, May 4, 2021 9:45 AM  
To: DeHaven, Callie <Callie.Dehaven@dep.state.fl.us>  
Cc: Laura King <LKing@PSC.STATE.FL.US>; Phillip Ellis <PELLIS@PSC.STATE.FL.US>; Donald Phillips <DPhillip@psc.state.fl.us>; Damian Kistner <DKistner@psc.state.fl.us>; Patti Zellner <PZELLNER@PSC.STATE.FL.US>  
Subject: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (004)

Dear Ms. DeHaven,  
Please find attached your copy of the 2021 Ten-Year Site Plans – Comment Request letter dated May 3, 2021, filed with the Florida Public Service Commission Clerk today.

Thank you,  
Patti Zellner  
Administrative Assistant  
Division of Engineering  
Phone: (850) 413-6208  
Email: pzellner@psc.state.fl.us



State Agencies

Fish and Wildlife Conservation Commission



## Donald Phillips

---

**From:** Ganey, Jessica <Jessica.Ganey@MyFWC.com>  
**Sent:** Thursday, June 03, 2021 10:44 AM  
**To:** Donald Phillips  
**Cc:** Hight, Jason; Cucinella, Josh; Goff, Jennifer; Conservation Planning Services  
**Subject:** FWC's Comments on Review of the 2021 Ten-Year Site Plans for Florida's Electric Utilities  
**Attachments:** 2021 Ten-Year Site Plans\_44431\_06022021.pdf

Please find attached FWC's comments on the above-referenced project. You will **not** receive a hard-copy version of this letter unless requested.

**If you wish to reply to our comments, please send your reply to:**

[ConservationPlanningServices@myFWC.com](mailto:ConservationPlanningServices@myFWC.com)

Jessica Ganey  
Government Operations Consultant II  
Office of Conservation Planning Services  
850-410-5367



June 3, 2021

Donald Phillips  
Engineering Specialist  
Florida Public Service Commission  
2540 Shumard Oak Blvd.  
Tallahassee, FL 32399-0850  
[DPhillip@psc.state.fl.us](mailto:DPhillip@psc.state.fl.us)

RE: Review of the 2021 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips:

Florida Fish and Wildlife Conservation Commission (FWC) staff reviewed the 2021 Ten-Year Site Plans for the electric utilities operating in Florida submitted to the Florida Public Service Commission (PSC) pursuant to Section 186.801, Florida Statutes. There are no comments or recommendations related to listed species or other fish and wildlife resources to offer on the following plans:

- Florida Power & Light Company / Gulf Power Company
- Duke Energy Florida
- Tampa Electric Company
- Florida Municipal Power Agency
- Gainesville Regional Utilities
- JEA
- Lakeland Electric
- Orlando Utilities Commission
- Seminole Electric Cooperative
- City of Tallahassee Utilities

FWC staff appreciates the opportunity to review the Ten-Year Site Plans submitted by the PSC. Please submit any future requests for assistance with fish and wildlife resources to our office at [ConservationPlanningServices@MyFWC.com](mailto:ConservationPlanningServices@MyFWC.com). For specific technical questions about this year's reviews, please call Josh Cucinella at (352) 620-7330.

Sincerely,



Jason Hight  
Land Use Planning Program Administrator  
Office of Conservation Planning Services

jh/jc  
2021 Ten-Year Site Plans\_44431\_06022021

Regional Planning Council

Treasure Coast Regional Planning Council



**From:** [Liz Gulick](#)  
**To:** [Donald Phillips](#)  
**Cc:** [Damian Kistner](#); [Kate Cotner](#); [will.p.cox@fpl.com](mailto:will.p.cox@fpl.com)  
**Subject:** Florida Power & Light Company and Gulf Power Company's 2021-2030 Ten Year Power Plant Site Plan  
**Date:** Thursday, July 08, 2021 2:35:30 PM  
**Attachments:** [Letter to Donald Phillips \(FPSC\) dated 7-2-21.pdf](#)

---

Dear Mr. Phillips:

The Treasure Coast Regional Planning Council reviewed the ten year power plant site plan prepared by Florida Power & Light Company/Gulf Power Company. Council approved the attached report at their board meeting on June 18, 2021.

If you have any questions, please call.

Sincerely,

Liz

Liz Gulick  
Treasure Coast Regional Planning Council  
421 SW Camden Avenue  
Stuart, FL 34994  
772 221-4060



**TREASURE COAST REGIONAL PLANNING COUNCIL**  
**INDIAN RIVER - ST. LUCIE - MARTIN - PALM BEACH**

July 2, 2021

Mr. Donald Phillips, Engineering Specialist  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

Subject: Florida Power & Light Company/Gulf Power Company Ten Year Power Plant  
Site Plan 2021-2030

Dear Mr. Phillips:

The Treasure Coast Regional Planning Council has reviewed the ten-year power plant site plan prepared by Florida Power and Light Company and Gulf Power Company. Council approved the comments in the attached report at their board meeting on June 18, 2021. The report concludes that while the region and all of South Florida remain vulnerable to fuel price increases and supply interruptions because of the continued heavy reliance on only two primary fuel types, natural gas and nuclear fuel, the use of solar power is projected to increase dramatically.

Council urges FPL/Gulf and the State of Florida to continue developing new programs to 1) reduce the reliance on fossil fuels as future energy sources, 2) increase conservation activities to offset the need to construct new power plants, and 3) increase the use of renewable energy sources to produce electricity.

Please contact me if you have any questions.

Sincerely yours,



Thomas J. Lanahan  
Executive Director

Attachment

cc: William P. Cox, FPL  
Kate Cotner, FPL  
Damien Kistner, FPSC

TREASURE COAST REGIONAL PLANNING COUNCIL

MEMORANDUM

To: Council Members

AGENDA ITEM 4B3

From: Staff

Date: June 11, 2021

Subject: Florida Power & Light (FPL)/Gulf Ten-Year Power Plant Site Plan 2021-2030

Background

Each year, every major electric utility in the State of Florida produces a ten-year site plan that includes an estimate of future electric power generating needs, a projection of how those needs will be met, and disclosure of information pertaining to the utility's preferred and potential power plant sites. The Florida Public Service Commission (FPSC) requested our Council review the most recent ten-year site plan prepared by FPL/Gulf and provide comments to the FPSC on or before August 3, 2021.

As background, NexEra Energy, Inc. is the parent company of FPL and Gulf; acquiring Gulf in January 2019. Gulf was merged into FPL effective January 1, 2021, so this document no longer separates FPL and Gulf except where necessary to add clarity to plans and actions around the prior individual service areas. Consolidation of the two utilities will be completed by 2022, and the two systems will begin operating as a single integrated electric operating system effective in mid-2022 after the completion of a new 161 kV transmission line.

Analysis

The attached report was prepared to summarize FPL plans for future power generation and provide comments for transmittal to the FPSC. The report concludes they continue to rapidly increase solar generating capacity but remain heavily dependent on natural gas and nuclear.

Council urges FPL and the State of Florida to continue developing new programs to 1) reduce the reliance on fossil fuels as future energy sources, 2) increase conservation activities to offset the need to construct new power plants, and 3) increase the use of renewable energy sources to produce electricity.

Recommendation

Council should approve the attached report and authorize its transmittal to the Florida Public Service Commission.

Council Action – June 18, 2021

Attachment

# TREASURE COAST REGIONAL PLANNING COUNCIL

## Report on the

### Florida Power & Light Company/Gulf Power Company Ten Year Power Plant Site Plan 2021-2030

June 18, 2021

#### Introduction

Each year every major electric utility in the State of Florida produces a ten-year site plan that includes an estimate of future electric power generating needs, a projection of how those needs will be met, and disclosure of information pertaining to the utility's preferred and potential power plant sites. The Florida Public Service Commission (FPSC) has requested that Council review the most recent ten-year site plan prepared by FPL/Gulf and provide comments to the FPSC on or before August 3, 2021.

#### Summary of the Plan

The plan indicates combined total summer peak demand projected growth of 13.8% over the 10-year period; from 27,083 megawatts (MW) in 2021 to 30,832 MW in 2030. During the same timeframe, FPL is expecting to reduce electrical use through demand-side management (DSM) programs that include conservation, energy efficiency, and load management initiatives. FPL/Gulf's combined DSM savings are expected to grow by 21.6% over the reporting period; from 1,827 MW in 2021 to 2,221 MW in 2030 (see Exhibit 1, Schedule 7.1).

After all DSM savings are factored in, FPL will still require additional capacity from conventional and renewable power sources to meet future electrical demand. This plan adds 3,477 MW of summer system capacity from 2021 to 2030 (Exhibit 2, Table ES-1).

The current plan makes primary electricity gains through upgrades and modernization to existing facilities plus construction of new generating units. Simultaneously, their plan continues to take older and coal-fired capacity out of service.

In the former Gulf service region, plans include new photovoltaic (PV) solar facilities, enhancements to an existing natural gas plant, conversion of two generating units from coal-fueled to natural gas, and retirement of their ownership portion of two other coal-fueled generating units. These changes will make the fuel mix and emissions profile of the former Gulf Power similar to FPL's service area prior to the merger with Gulf.

Major changes in generating capacity are as follows:

#### **FPL system area:**

- 2021 through 2030 - new solar (PV) additions of approximately 7,599 MW (nameplate);
- 2021 through 2026 - capacity upgrades of existing combined cycle units;

- By January 2022 - retirement of FPL’s ownership portion of the Scherer 4 coal unit (approximately 630 MW);
- By late 2021 – retirement of the Manatee existing steam Units 1 & 2 – approximately 1,620 MW);
- By late 2021 - a 409 MW battery storage facility will be added at the existing Manatee plant site plus two 30 MW of battery storage is projected to be added to the Sunshine Gateway and Echo River solar energy centers (see Exhibit 2, Table ES-1).
- Mid-2022 – modernization of the existing Lauderdale power plant site with the new DBEC Unit 7 CC (approximately 1,160 MW); and
- In 2029 and 2030, a total of approximately 400 MW of battery storage.

**Gulf system area:**

- 2022 through 2030 - new solar (PV) additions of approximately 1,714 MW (nameplate);
- Mid-2022 - A new FPL-to-Gulf transmission line (the NFRC line) enabling a bidirectional transfer capability between the two areas of up to 850 MW;
- Beginning of 2022 - Four new CTs at the Gulf Clean Energy Center (formerly Crist) plant site (approximately 940 MW);
- May 2023 - Expiration (as per terms of the contract) of 885 MW from the Shell PPA;
- Beginning of 2024 - The retirement of Gulf’s ownership portion of the coal-fueled Daniel Units 1 & 2 (approximately 500MW); and
- 2030 - A total of approximately 300 MW of battery storage.

**Preferred and Potential Power Plant Sites**

One of the primary reasons to prepare an annual ten-year power plant site plan is to get information on a utility’s plans on preferred and potential siting of new facilities.

Based on projected future resource needs, FPL/Gulf has identified 29 “preferred sites” for future power generating facilities. The following are in the Treasure Coast Region (Exhibit 3):

1. Orange Blossom Solar Energy Center, Indian River County: The proposed 607-acre site is located at 118<sup>th</sup> Avenue west of Interstate 95.
2. Sabal Palm Solar Energy Center, Palm Beach County: The proposed 646-acre site is located north of 60th Street between Carol Street and 190th Trail.
3. Sundew Solar Energy Center, St. Lucie County: The proposed 473-acre site is located one mile west of the Glades Cut-off Road and Carlton Road intersection.
4. Grove Solar Energy Center, Indian River County: The proposed 574-acre site is located at the southwest corner of Oslo Road and Ninth Street, Southwest.
5. White Tail Solar Energy Center, Martin County: The proposed 601-acre site is located on the north side of Citrus Boulevard about 8 miles southwest of Florida’s Turnpike.
6. Bluefield Preserve Solar Energy Center, St. Lucie County: Location to be determined – estimated 592-acres.

Each of the above sites are planned for 74.5 MW PV solar plants. By their nature, these facilities have minimal offsite impacts.



FPL has also identified 10 “potential sites” for future generation and storage facilities, though potential sites do not represent a commitment by the utility to construct these new facilities. One of these sites is currently planned to be in the Treasure Coast Region:

1. Pink Trail Solar Energy Center, St. Lucie County

#### Other Factors

The FPL/Gulf 2021-2030 plan describes seven factors that have influenced or may influence this resource plan. They are summarized below:

1. The need to maintain balance between load and generating capacity in Southeastern Florida (Miami-Dade and Broward counties). This balance has both reliability and economic implications.
2. The desire to maintain/enhance fuel diversity in the FPL system while considering system economics.
3. The need to maintain an appropriate balance of DSM and supply resources from the perspectives of both system reliability and operations including a 20 percent total reserve margin criterion for summer and winter.
4. The impact of meeting Federal and state energy-efficiency codes and standards that will reduce forecasted summer and winter peak loads but also reduce potential DSM initiatives.
5. The trends of decreasing costs for fuel, decreasing costs for new generating units, and increasing fuel efficiency of new generating units.
6. The forecast of potential CO2 compliance costs that remain lower than projections from a decade ago due to lower forecasted electricity usage growth rate, lower forecasted natural gas cost, retirements of existing coal units, and increasing implementation of renewable energy sources including solar.
7. Projected increases in electric vehicle (EV) adoption. FPL’s current load forecast includes a significantly higher projection of EV adoption than the load forecast that was used to develop the resource plan in the 2020 Site Plan.

#### Evaluation

The ten-year site plan indicates that fossil fuels will be the primary source of energy used by FPL to generate electricity during the next 10 years (see Exhibit 4 Schedule 6.2); accounting for 71.4% (0.5% from coal and 70.9% from natural gas) of FPL’s electric generation in 2021. The plan predicts fossil fuels will account for 61.6% (0.2% from coal and 61.4% from natural gas) of combined FPL/Gulf electric generation in 2030. During the same period, nuclear sources are predicted to drop from 22.8% in 2021 to 19.5% in 2030, primarily due to significant FPL solar investment and the delay of significant nuclear power expansion beyond the 10-year time horizon. Solar sources are predicted to dramatically increase from 4.9% in 2021 to 17.5% in 2030. For Gulf

Power, their fuel sources in 2021 will also primarily be fossil fuels at 111.7% (16.2% from coal and 95.5% from natural gas) (percentage exceeds 100% due to exchange with other utilities). The 2030 sources are shown above integrated with FPL.

### Renewable Energy

The ten-year site plan indicates FPL is continuing its efforts to implement cost-effective renewable energy. FPL has facilitated a number of renewable energy projects (facilities which burn bagasse, waste wood, municipal waste, etc.) through power purchase agreements. For example, FPL has a contract to receive firm capacity from the Solid Waste Authority of Palm Beach County through April 2034. FPL's efforts to increase use of cost-effective renewable energy also include the use of utility-scale solar and customer-focused solar. FPL also has interest in battery storage. These efforts are described below.

#### ***Solar:***

Universal Solar: This plan shows a significant increase in utility-scale solar throughout the 10-year period. It adds 9,313 MW of PV generation, with a breakout of 7,599 MW in the former FPL service area and 1,714 MW in Gulf's prior individual service area. When combined with the current 2,345 MW of solar PV already installed, projected solar PV climbs to 11,657 MW (nameplate) for the integrated utility by the end of 2030. This planned solar implementation schedule is consistent with FPL's January 2019 announcement of its "30-by-30" plan in which FPL stated an objective to install more than 30 million solar panels on FPL's system by the year 2030.

Customer-Focused Voluntary PV Pilot Programs: FPL began implementation of two customer-focused PV pilot programs in 2015.

- a. FPL SolarNow provides customers the opportunity to bring solar projects into local communities by funding solar facility construction in public areas such as parks, zoos, schools, and museums. Customers voluntarily contribute \$9/month. As of the end of 2020, there were 51,916 participants enrolled in the program with 77 projects located in 36 communities within the FPL service territory. These projects represent approximately 2,528 kW-DC of PV generation.
- b. FPL SolarTogether Program offers FPL customers the option to purchase solar output/attributes from cost-effective, large-scale solar energy centers with no long-term contracts, administrative fees, or termination penalties. Under this program, participants' monthly electric bills show a subscription charge and a direct credit on their electric bills associated with the amount of solar-generated capacity purchased. The first phase of the program is projected to add approximately 1,490 MW of new solar facilities. Open enrollment began on March 17, 2020 which received favorable reception by residential, small businesses, and commercial customers. Eleven of the twenty approved solar sites under this program were completed in 2020. Four additional sites were completed in February and March of 2021 and the remaining five sites are expected to become commercially operational between April and June 2021. As of this same time, total

subscriptions for the program have reached 1,367 MW of the 1,490 MW available (92% subscribed).

C&I Solar Partnership Pilot Program: This program is a partnership with interested commercial and industrial (C&I) customers over an approximately 5-year period and expired in 2020. The objective was to examine the effect of high localized PV penetration on FPL's distribution system and determine how best to address any problems that may be identified.

### ***Battery Storage:***

A 409 MW battery storage facility will be added in late 2021 at the existing Manatee plant site and two 30 MW battery storage units will be added in late 2021; one at the existing Sunshine Gateway Solar Energy Center and another at the Echo River Solar Energy Center. An additional total of approximately 700 MW of battery storage is also included in the resource plan in the years 2029 and 2030 in both FPL's area and Gulf's area.

### ***Electric Vehicle Efforts:***

Florida continues to rank in the top three nationally for EV adoption, and more Floridians are buying electric vehicles every year. FPL began implementing the new FPL EVolution pilot program in 2019 to support EV growth. The goal is to install more than 1,000 charging ports, which would increase public EV charging stations in Florida by 50%. This pilot program will be conducted in partnership with interested host customers over an approximate 3-year period. Limited investments will be made in EV charging infrastructure. Installations will encompass different EV charging technologies and market segments, including level 2 workplace and fleet charging at public and/or private workplaces; customers' homes; and DC fast charging in high-traffic areas and strategically located sites along highway corridors and evacuation routes to further enable long distance travel for EV drivers.

These places will include Florida's Turnpike Service Plazas, public parking areas, tourist attractions, hospitals, and large businesses that employ hundreds of Florida residents. As of December 31, 2020, FPL has installed 306 ports at 60 locations.

### **Conclusions and Recommendations**

Council is encouraged that FPL continues to aggressively expand cost-effective utility-scale and customer solar capacity across the generation system, with projects to increase the percentage of total electric generation system capacity from approximately 4.9% to 17.5% by the end of 2030. Council urges FPL to continue their commitment to install more than 30 million solar panels on the system by the year 2030.

Council recommends FPL continue to make progress toward adopting a more balanced portfolio of fuels that includes a significant component of renewable energy sources. This is important to reduce vulnerability to fuel price increases and supply interruptions. Council continues to encourage the Florida Legislature to adopt a Renewable Portfolio Standard to provide a mechanism to expand the use of renewable energy in Florida.

Council supports FPL's existing and proposed solar projects and encourages FPL to develop additional projects based on renewable resources. FPL should consider developing other programs to install, own, and operate PV units on the rooftops of private and public buildings. The shift to rooftop PV systems distributed throughout the area of demand could reduce reliance on large transmission lines and reduce costs associated with owning property; purchasing fuel; and permitting, constructing, and maintaining a power plant. Another advantage of this strategy is that PV systems do not require water for cooling. The incentive for owners of buildings to participate in this strategy is they could be offered a reduced rate for purchasing electricity. Also, FPL should consider expanding solar rebate programs for customers who install PV and solar water heating systems on their homes and businesses. These rebates should be coordinated with other programs, such as the Solar and Energy Loan Fund (SELF) and Property-Assessed Clean Energy (PACE) programs, to provide participants in these programs the option of receiving a rebate. SELF is a low interest rate loan program that provides financing for clean energy solutions. PACE programs allow property owners to finance energy retrofits by placing an additional tax assessment on the property in which the investment is made.

Council urges FPL and the State of Florida to continue developing new programs to: 1) reduce the reliance on fossil fuels as future energy sources; 2) increase conservation activities to offset the need to construct new power plants; and 3) increase the use of renewable energy sources to produce electricity. The complete costs of burning fossil fuels, such as the costs to prevent environmental pollution and costs to the health of the citizens, need to be considered in evaluating these systems. State legislators should amend the regulatory framework to provide financial incentives for power providers and customers to increase conservation measures and to rely to a greater extent on renewable energy sources. The phasing in of PV and other locally available energy sources will help Florida achieve a sustainable future as called for in Council's Strategic Regional Policy Plan.

The utility filing can be accessed at the following link:

<http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans>

Attachments

# Exhibit 1

## 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)	(13)	(14)	(15)	(16)
August of Year	Firm Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Firm Capacity Available MW	Total Peak Demand MW	DSM MW	Firm Summer Peak Demand MW	Total Reserve Margin Before Maintenance MW % of Peak	Scheduled Maintenance MW	Total Reserve Margin After Maintenance MW % of Peak	Generation Only Reserve Margin After Maintenance MW % of Peak			
<b>FPL</b>															
2021	27,623	110	0	434	28,166	24,621	1,821	22,800	5,367	23.5	0	5,367	23.5	3,545	14.4
<b>Gulf</b>															
2021	2,440	1,015	0	0	3,456	2,462	6	2,456	1,000	40.7	0	1,000	40.7	994	40.4
<b>Integrated FPL and Gulf</b>															
2022	30,741	1,125	0	4	31,870	27,277	1,886	25,392	6,478	25.5	0	6,478	25.5	4,592	16.8
2023	31,163	240	0	4	31,407	27,771	1,943	25,828	5,579	21.6	0	5,579	21.6	3,636	13.1
2024	31,300	240	0	4	31,543	28,278	2,006	26,272	5,271	20.1	0	5,271	20.1	3,265	11.5
2025	31,750	240	0	4	31,993	28,675	2,050	26,625	5,368	20.2	0	5,368	20.2	3,318	11.6
2026	32,135	240	0	4	32,378	29,051	2,084	26,967	5,411	20.1	0	5,411	20.1	3,327	11.5
2027	32,440	240	0	0	32,679	29,340	2,118	27,221	5,458	20.1	0	5,458	20.1	3,340	11.4
2028	32,868	239	0	0	33,107	29,721	2,152	27,568	5,539	20.1	0	5,539	20.1	3,386	11.4
2029	33,436	239	0	0	33,676	30,233	2,186	28,047	5,629	20.1	0	5,629	20.1	3,442	11.4
2030	34,109	239	0	0	34,348	30,832	2,221	28,612	5,736	20.0	0	5,736	20.0	3,515	11.4

Col. (2) represents capacity additions and changes projected to be in-service by June 1st. These MW are generally considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated.

Col. (6) = Col.(2) + Col.(3) - Col(4) + Col(5).

Col.(7) reflects the 2021 load forecast without incremental DSM or cumulative load management.

Col.(8) represents cumulative load management capability, plus incremental conservation and load management, from 9/2020-on intended for use with the 2021 load forecast.

Col.(10) = Col.(6) - Col.(9)

Col.(11) = Col.(10) / Col.(9)

Col.(12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period.

Col.(13) = Col.(10) - Col.(12)

Col.(14) = Col.(13) / Col.(9)

Col.(15) = Col.(6) - Col.(7) - Col.(12)

Col.(16) = Col.(15) / Col.(7)

# Exhibit 2

**Table ES-1: Projected Capacity & Firm Purchase Power Additions and Changes:**

Year <sup>1/</sup>	Projected Capacity & Firm Purchase Power Changes	FPL Area Summer MW (Approx.)	Gulf Area Summer MW (Approx.)	Date	Summer Reserve Margin <sup>2/</sup>
<b>FPL</b>					
2021	Solar PV <sup>3/</sup>	321		1st/2nd Quarter 2021	
	<b>Total of MW changes to Summer firm capacity:</b>	<b>321</b>			<b>23.5%</b>
<b>Gulf</b>					
2021			0		
	<b>Total of MW changes to Summer firm capacity:</b>		<b>0</b>		<b>40.7%</b>
<b>Integrated FPL and Gulf</b>					
2022	Manatee 1 and 2 Retirement	(1,626)		Fourth Quarter 2021	
	Scherer 4 Retirement	(634)		Fourth Quarter 2021	
	Manatee Battery Storage	409		Fourth Quarter 2021	
	Sunshine Gateway Battery Storage	30		Fourth Quarter 2021	
	Echo River Battery Storage	30		Fourth Quarter 2021	
	Gulf Clean Energy Center Unit 8		938	Fourth Quarter 2021	
	Blue Springs PV <sup>3/</sup>		41	Fourth Quarter 2021	
	Cotton Creek PV <sup>3/</sup>		43	Fourth Quarter 2021	
	Solar PV <sup>3/</sup>	232		First Quarter 2022	
	Manatee 3 Upgrade	47		Second Quarter 2022	
	Martin 8 Upgrade	11		Second Quarter 2022	
	Dania Beach Clean Energy Center Unit 7	1,163		Second Quarter 2022	
	Solar Degradation <sup>4/</sup>	(6)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>(344)</b>	<b>1,022</b>		<b>25.5%</b>
2023	Manatee 3 Upgrade	16		Third Quarter 2022	
	Solar PV	152	186	First Quarter 2023	
	Sanford 4 Upgrade	18		First Quarter 2023	
	Sanford 5 Upgrade	9		First Quarter 2023	
	Shell PPA Retirement		(865)	Second Quarter 2023	
	Turkey Point 5 Upgrade	45		Second Quarter 2023	
	Fort Myers 2 Upgrade	4		Third Quarter 2023	
	Solar Degradation <sup>4/</sup>	(8)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>236</b>	<b>(699)</b>		<b>21.6%</b>
2024	Sanford 5 Upgrade	17		Third Quarter 2023	
	Solar PV <sup>3/</sup>	263	171	First Quarter 2024	
	Daniel 1 and 2 Retirement		(502)	First Quarter 2024	
	Martin 8 Upgrade	21		First Quarter 2024	
	Sanford 4 Upgrade	17		First Quarter 2024	
	Turkey Point 5 Upgrade	67		Second Quarter 2024	
	Okeechobee Energy Center Upgrade	15		Second Quarter 2024	
	Fort Myers 2 Upgrade	18		Second Quarter 2024	
	Manatee 3 Upgrade	58		Second Quarter 2024	
	Solar Degradation <sup>4/</sup>	(9)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>468</b>	<b>(331)</b>		<b>20.1%</b>
2025	Pea Ridge 1, 2 and 3 Retirement		(12)	Second Quarter 2024	
	Crist 4 Retirement		(78)	Fourth Quarter 2024	
	Solar PV <sup>3/</sup>	263	171	First Quarter 2025	
	Sanford 5 Upgrade	9		First Quarter 2025	
	Martin 8 Upgrade	66		Second Quarter 2025	
	Okeechobee Energy Center Upgrade	29		Second Quarter 2025	
	Solar Degradation <sup>4/</sup>	(10)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>358</b>	<b>81</b>		<b>20.2%</b>
2026	Fort Myers 2 Upgrade	4		Third Quarter 2025	
	Solar PV <sup>3/</sup>	370	34	First Quarter 2026	
	Solar Degradation <sup>4/</sup>	(11)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>363</b>	<b>34</b>		<b>20.1%</b>
2027	Crist 5 Retirement		(78)	Fourth Quarter 2026	
	Broward South PPA Retirement	(4)		Fourth Quarter 2026	
	Solar PV <sup>3/</sup>	396		First Quarter 2027	
	Solar Degradation <sup>4/</sup>	(12)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>379</b>	<b>(78)</b>		<b>20.1%</b>
2028	Lansing Smith A Retirement		(32)	Fourth Quarter 2027	
	Solar PV <sup>3/</sup>	473		First Quarter 2028	
	Solar Degradation <sup>4/</sup>	(13)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>460</b>	<b>(32)</b>		<b>20.1%</b>
2029	Solar PV <sup>3/</sup>	224	60	First Quarter 2029	
	Battery Storage	300		First Quarter 2029	
	Solar Degradation <sup>4/</sup>	(15)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>509</b>	<b>60</b>		<b>20.1%</b>
2030	Perdido 1 and 2 Retirement		(3)	Fourth Quarter 2029	
	Solar PV <sup>3/</sup>	198	90	First Quarter 2030	
	Battery Storage	100	300	First Quarter 2030	
	Solar Degradation <sup>4/</sup>	(18)			
	<b>Total of MW changes to Summer firm capacity:</b>	<b>283</b>	<b>387</b>		<b>20.0%</b>

<sup>1/</sup> Year shown reflects when the MW change begins to be accounted for in Summer Reserve Margin calculations.

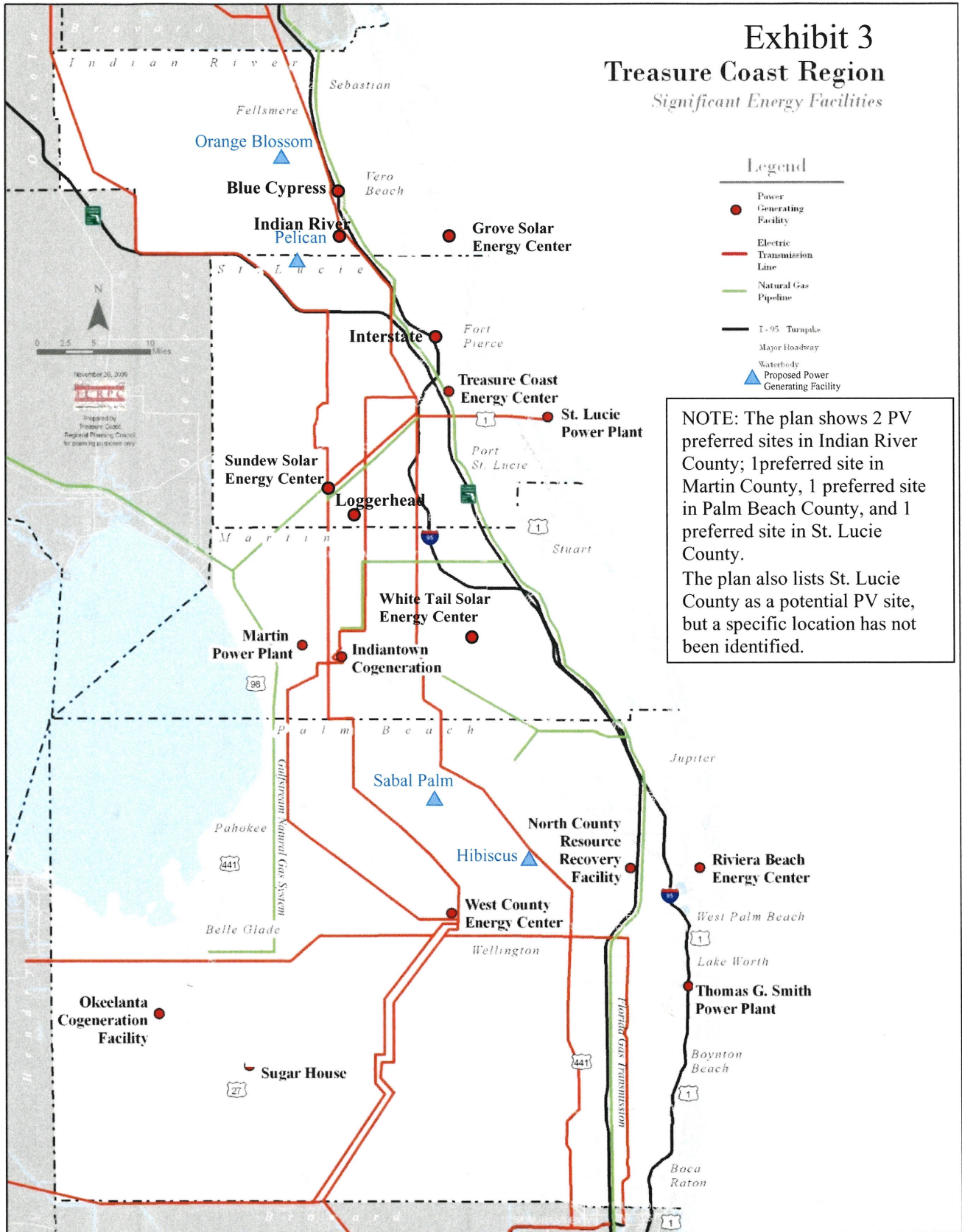
<sup>2/</sup> Winter Reserve Margins are typically higher than Summer Reserve Margins. Winter Reserve Margins are shown on Schedule 7.2 in Chapter III.

<sup>3/</sup> MW values shown for the PV facilities represent the Summer firm capacity assumptions for the PV facilities.

<sup>4/</sup> An annual 0.3% degradation for PV output is assumed for both FPL and Gulf Solar. Total degradation is shown solely in the FPL column.



# Exhibit 3 Treasure Coast Region Significant Energy Facilities



# Exhibit 4

## Schedule 6.2 Forecasted Energy Sources % by Fuel Type

Energy Source	Units	Forecasted										
		2021		2022	2023	2024	2025	2026	2027	2028	2029	2030
		FPL	Gulf <sup>1/</sup>	Integrated FPL and Gulf								
(1) Annual Energy Interchange <sup>2/</sup>	%	0.0	(25.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(2) Nuclear	%	22.8	0.0	21.3	20.8	20.5	20.7	20.3	20.2	20.3	19.7	19.5
(3) Coal	%	0.5	16.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
(4) Residual (FO6) -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) Distillate (FO2) -Total	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(7) Steam	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(8) CC	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9) CT	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10) Natural Gas -Total	%	70.9	95.5	70.9	70.3	69.0	67.5	66.5	65.2	63.4	62.4	61.4
(11) Steam	%	0.0	8.9	0.3	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.1
(12) CC	%	70.6	42.1	65.9	68.1	68.0	66.5	65.9	64.6	62.8	61.8	61.0
(13) CC PPAs - Gas	%	0.0	44.0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(14) CT	%	0.3	0.6	0.5	0.7	0.5	0.5	0.2	0.3	0.2	0.3	0.2
(15) Solar <sup>3/</sup>	%	4.9	3.5	5.8	6.9	8.4	9.8	11.2	12.7	14.4	16.0	17.5
(16) PV	%	2.6	1.6	3.4	4.6	6.1	7.5	8.9	10.4	12.1	13.8	15.4
(17) Solar Together <sup>4/</sup>	%	2.3	0.0	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0
(18) Solar Thermal	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(19) Solar PPAs	%	0.0	1.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
(20) Wind PPAs	%	0.0	8.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
(21) Other <sup>5/</sup>	%	0.9	1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.8
		100	100	100	100	100	100	100	100	100	100	100

1/ Sources: Forecast for Gulf 2021: Projections from Southern Company.

2/ Represents interchange between FPL/Gulf and other utilities. For Gulf, this number represents the net energy exchange with Southern Co.

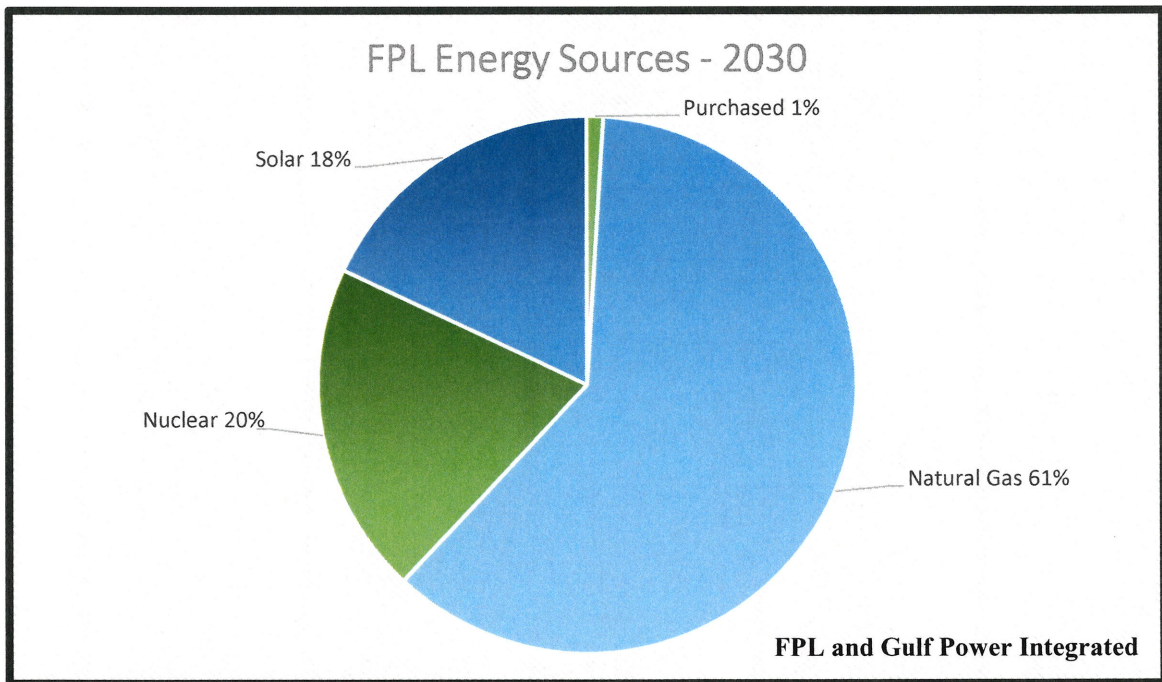
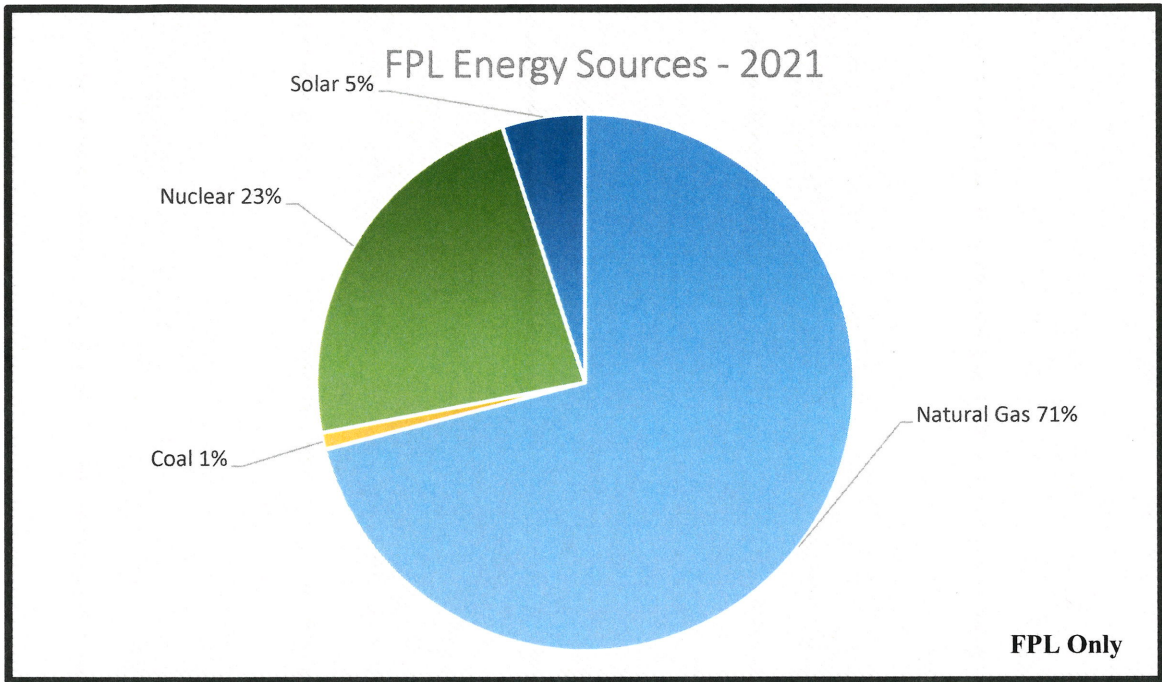
3/ Represents output from FPL and Gulf's Solar PV, Solar Together, Solar Thermal, and Solar PPA facilities.

4/ The values shown represent energy produced from FPL-owned solar facilities that are part of FPL's SolarTogether (ST) program.

At the request of any ST participant, environmental attributes in the form of renewable energy certificates for that participant's allocation of the total energy produced will be retired on the participant's behalf.

5/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, etc., net of Economy and other Power Sales.





Water Management Districts

St. Johns River Water Management District



## Donald Phillips

---

**From:** Steve Fitzgibbons <SFitzgibbons@sjrwmd.com>  
**Sent:** Friday, June 04, 2021 10:26 AM  
**To:** Donald Phillips; Damian Kistner  
**Cc:** Richard Burklew; Jeff Prather; Tom Frick; Marji Hightower  
**Subject:** RE: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (021)  
**Attachments:** 2021 TYSP Comment Request.pdf

Mr. Phillips:

As requested in your letter dated May 4, 2021 (attached), St. Johns River Water Management District (District) staff have reviewed the Ten-Year Site Plans (TYSP) for Florida Power & Light Company/Gulf Power, Duke Energy Florida, Florida Municipal Power Agency, and Seminole Electric Cooperative. Based on review of the submitted materials, District staff had no comments on the TYSP and found them to be suitable as planning documents.

If you have any questions or need additional information, please contact me.

Sincerely,  
Steve Fitzgibbons

Steven Fitzgibbons, AICP  
Intergovernmental Planner  
Division of Strategic Planning and Initiatives  
St. Johns River Water Management District  
7775 Baymeadows Way, Suite 102  
Jacksonville, FL 32256  
Office (386) 312-2369  
Website: [www.sjrwmd.com](http://www.sjrwmd.com)  
Connect with us: [Newsletter](#), [Facebook](#), [Twitter](#), [Instagram](#), [YouTube](#), [Pinterest](#)



---

**From:** Patti Zellner <[PZELLNER@PSC.STATE.FL.US](mailto:PZELLNER@PSC.STATE.FL.US)>  
**Sent:** Tuesday, May 4, 2021 9:47 AM  
**To:** Ann Shortelle <[ashortelle@sjrwmd.com](mailto:ashortelle@sjrwmd.com)>  
**Cc:** Laura King <[LKing@PSC.STATE.FL.US](mailto:LKing@PSC.STATE.FL.US)>; Phillip Ellis <[PELLIS@PSC.STATE.FL.US](mailto:PELLIS@PSC.STATE.FL.US)>; Donald Phillips <[DPhillip@psc.state.fl.us](mailto:DPhillip@psc.state.fl.us)>; Damian Kistner <[DKistner@psc.state.fl.us](mailto:DKistner@psc.state.fl.us)>; Patti Zellner <[PZELLNER@PSC.STATE.FL.US](mailto:PZELLNER@PSC.STATE.FL.US)>  
**Subject:** DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (021)

Dear Ms. Shortelle,

Please find attached your copy of the 2021 Ten-Year Site Plans – Comment Request letter dated May 3, 2021, filed with the Florida Public Service Commission Clerk today.

Thank you,

Patti Zellner  
Administrative Assistant  
Division of Engineering  
Phone: (850) 413-6208  
Email: [pzellner@psc.state.fl.us](mailto:pzellner@psc.state.fl.us)



We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this [link](#)

#### Notices

- Emails to and from the St. Johns River Water Management District are archived and, unless exempt or confidential by law, are subject to being made available to the public upon request. Users should not have an expectation of confidentiality or privacy.
- Individuals lobbying the District must be registered as lobbyists (§112.3261, Florida Statutes). Details, applicability and the registration form are available at <http://www.sjrwmd.com/lobbyist/>

From: Steve Fitzgibbons <SFitzgibbons@sjrwmd.com>  
Sent: Friday, June 04, 2021 10:26 AM  
To: Donald Phillips; Damian Kistner  
Cc: Richard Burklew; Jeff Prather; Tom Frick; Marji Hightower  
Subject: RE: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (021)  
Attachments: 2021 TYSP Comment Request.pdf

Mr. Phillips:

As requested in your letter dated May 4, 2021 (attached), St. Johns River Water Management District (District) staff have reviewed the Ten-Year Site Plans (TYSP) for Florida Power & Light Company/Gulf Power, Duke Energy Florida, Florida Municipal Power Agency, and Seminole Electric Cooperative. Based on review of the submitted materials, District staff had no comments on the TYSP and found them to be suitable as planning documents.

If you have any questions or need additional information, please contact me.

Sincerely,  
Steve Fitzgibbons

Steven Fitzgibbons, AICP  
Intergovernmental Planner  
Division of Strategic Planning and Initiatives  
St. Johns River Water Management District  
7775 Baymeadows Way, Suite 102  
Jacksonville, FL 32256  
Office (386) 312-2369  
Website: [www.sjrwmd.com](http://www.sjrwmd.com)  
Connect with us: Newsletter, Facebook, Twitter, Instagram, YouTube, Pinterest

From: Patti Zellner <PZELLNER@PSC.STATE.FL.US>  
Sent: Tuesday, May 4, 2021 9:47 AM  
To: Ann Shortelle <ashortelle@sjrwmd.com>  
Cc: Laura King <LKing@PSC.STATE.FL.US>; Phillip Ellis <PELLIS@PSC.STATE.FL.US>; Donald Phillips <DPhillip@psc.state.fl.us>; Damian Kistner <DKistner@psc.state.fl.us>; Patti Zellner <PZELLNER@PSC.STATE.FL.US>  
Subject: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (021)

Dear Ms. Shortelle,  
Please find attached your copy of the 2021 Ten-Year Site Plans – Comment Request letter dated May 3, 2021, filed with the Florida Public Service Commission Clerk today.

Thank you,  
Patti Zellner  
Administrative Assistant  
Division of Engineering  
Phone: (850) 413-6208  
Email: [pzellner@psc.state.fl.us](mailto:pzellner@psc.state.fl.us)

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this link

#### Notices

- Emails to and from the St. Johns River Water Management District are archived and, unless exempt or confidential by law, are subject to being made available to the public upon request. Users should not have an expectation of confidentiality or privacy.
- Individuals lobbying the District must be registered as lobbyists (§112.3261, Florida Statutes). Details, applicability and the registration form are available at <http://www.sjrwmd.com/lobbyist/>

Local Government

Pinellas County





July 26, 2021

State of Florida Public Service Commission  
Attn: Donald Phillips, Engineering Specialist  
Capital Circle Office Center  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

**Re: Review of 2021 Ten-Year Site Plans for Florida's Electric Utilities**

Dear Mr. Phillips:

Thank you for the invitation to review the Ten-Year Site Plans (TYSP) for Florida's Electric Utilities. Pinellas County (County) is included in the Duke Energy Florida (DEF) electric utility service area. Hence, comments on the TYSP the focus of the County's review is specific to DEF's TYSP. The County has a keen interest in DEF's TYSP, as there remains a current Qualified Facility (QF) Power Purchase Agreement (PPA) in place between both parties for avoided electrical power capacity and the sale of electrical power from a municipal solid waste to energy facility. The PPA expires on December 31, 2024.

The County has questions, issues, and/or concerns with the following:

1. As previously noted by the County to the Commission based on 2019 review of the DEF TYSP, DEF continues to rely on ambitious retail sales to offset wholesale sales to justify demand growth to install more capacity or purchase additional electrical power from others.
2. DEF's assumption that retail/residential sales will increase as the number of customers increase, when the actual percent of change, since 2011, between number of customers and retail energy load sales clearly shows that growth of number of customers does not indicate growth in retail energy load sales.
3. The significant growth of twenty-seven (27) planned solar photovoltaic (PV) generation sites from 194 MW in 2021 to 2,000 MW by 2030. Twenty (20) of the planned site are essentially defined at 'TBD' and void of all economics. Yet, DEF has clearly detailed cost data for natural gas fired combustion turbine installations for the same forecast period.

315 Court Street, Room 601  
Clearwater, FL 33756  
Phone (727) 464-3485  
Fax (727) 464-4384  
V/TDD (727) 464-4062  
[www.pinellascounty.org](http://www.pinellascounty.org)

4. The Pinellas Waste-to-Energy (WTE) facility is listed as 'Renewable MSW' but continues to use non-renewable natural gas fired combustion turbines as the basis of cost for avoided capacity calculations for a QF Standard Offer Contract. As listed as 'renewable', why not combine Renewable MSW into the same category as Renewable Solar and pay at the equivalent rates as avoided capacity for PV installations? The County strongly believes that all 'Renewables' should be treated on the same economic basis. This is especially true for Renewable MSW since it provides base load, highly reliable capacity, with a proven track record of over 30-years in the State of Florida.
5. The plan indicates that most interest in QF sales is from PV developers with sixty (60) active projects and 4,700 MW of interconnection requests and DEF is the project developer for twelve (12) of the active projects. The plan documents do not elaborate on what constitutes an "active" project.
6. Pinellas County is one of the largest Clean Energy Connection municipal partners and would recommend DEF to consider large scale solar generation and/or battery energy storage in Pinellas County for grid resiliency and emergency management needs.
7. As a large customer of DEF's, the plan lacks program information that targets large customer assistance such as energy audits and automated software to assist with energy data transfer to energy management software. It is recommended that DEF joins other nationwide utilities to provide data transfer to systems such as the Energy STAR Portfolio Manager. Doing so will permit customers to better track consumption to compare to energy efficiency goals.

If you have any questions regarding the County's review, please contact Paul Sacco, Department of Solid Waste Director at 727-464-7514 or at [psacco@pinellascounty.org](mailto:psacco@pinellascounty.org).

Sincerely,



Barry A. Burton  
County Administrator

cc: Jill Silverboard, Deputy County Administrator/Chief of Staff  
Paul Sacco, Director, Department of Solid Waste

COMMISSIONERS:  
GARY F. CLARK, CHAIRMAN  
ART GRAHAM  
ANDREW GILES FAY  
MIKE LA ROSA

STATE OF FLORIDA



DIVISION OF ENGINEERING  
TOM BALLINGER  
DIRECTOR  
(850) 413-6910

# Public Service Commission

May 4, 2021

Mr. Barry Burton, County Administrator  
Pinellas County  
315 Court Street  
Clearwater, FL 33756  
bburton@pinellascounty.org

**Re: Review of the 2020 Ten-Year Site Plans for Florida's Electric Utilities**

Dear Mr. Burton,

Pursuant to Section 186.801, Florida Statutes, the Florida Public Service Commission (Commission) is responsible for reviewing and classifying each electric utility's Ten-Year Site Plan as "suitable" or "unsuitable." As part of the annual review, in accordance with Rule 25-22.071, Florida Administrative Code, the Commission must provide a copy of the relevant Ten-Year Site Plans (TYSP) to, and solicit the views of, the appropriate state, regional, and local agencies. To this end, the Commission has made available on its website electronic copies of the 2020 TYSPs for all the Florida electric utilities at the following link: <http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans>.

Below is a list of the TYSPs of electric utilities that have identified preferred or potential plant sites in your jurisdiction for your review and comments in regard to their suitability as planning documents. Please note that these plans are not designed to give information about proposed facilities in such detail as would be required for a development permit or other formal process.

**Relevant Ten-Year Site Plan**

Florida Power & Light (FPL)/Gulf Power Company (GULF)  
Duke Energy Florida (DEF)  
Tampa Electric Company (TECO)

Please forward all comments by August 3, 2021, including an electronic copy to my email address below. If you have any questions, or require additional time to file comments, please feel free to contact me by phone at (850) 413-6974, or by email at [DPhillip@psc.state.fl.us](mailto:DPhillip@psc.state.fl.us), or Damian Kistner by phone at (850) 413-6858, or by email [DKistner@psc.state.fl.us](mailto:DKistner@psc.state.fl.us). Thank you for your assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Donald Phillips".

Donald Phillips  
Engineering Specialist



Local Government

Santa Rosa County





## Donald Phillips

---

**From:** Shawn Ward <ShawnW@santarosa.fl.gov>  
**Sent:** Tuesday, May 04, 2021 11:59 AM  
**To:** Donald Phillips; Damian Kistner  
**Cc:** Evelyn Hamilton; Dan Schebler  
**Subject:** FW: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (049)  
**Attachments:** 2021 TYSP Comment Request.LETTER FINAL\_Part49.pdf

Mr. Phillips,

Thank you for the opportunity to review and provide comments. Santa Rosa County has no comments or objections to the proposed Florida Power and Light, Blackwater River Solar Energy Center in Santa Rosa County.

Respectfully,

Shawn Ward, AICP  
Planning and Zoning Director  
Santa Rosa County Development Services Center  
[6051 Old Bagdad Hwy, Suite 202 | Milton, Florida 32583](#)  
P: [850.981.7082](tel:850.981.7082) | C: [850.776.4488](tel:850.776.4488) | F: [850.983.9874](tel:850.983.9874)  
[Santarosa.fl.gov](http://Santarosa.fl.gov) | [Facebook](#) | [Twitter](#) | [Instagram](#)

Help us improve our customer service with this [short survey](#):

---

**From:** Evelyn Hamilton <EvelynH@santarosa.fl.gov>  
**Sent:** Tuesday, May 4, 2021 10:41 AM  
**To:** Shawn Ward <ShawnW@santarosa.fl.gov>  
**Cc:** Dan Schebler <DanS@santarosa.fl.gov>  
**Subject:** FW: DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (049)

Hi Shawn,

Can you follow-up and provide update or response if required.

Thanks.

*Evelyn Hamilton*  
*Executive Assistant to*  
Dan Schebler, County Administrator  
Santa Rosa County Administrator's Office  
6495 Caroline Street, Suite M | Milton, Florida 32570  
P: 850.983.1855 | C: 850-375-0256 | F: 850.983.1856  
[Santarosa.fl.gov](http://Santarosa.fl.gov) | [Facebook](#) | [Twitter](#) | [Instagram](#)

Help us improve our customer service with this [short survey](#)

Florida has a very broad Public Records Law. Virtually all written communications to or from Santa Rosa County Personnel are public records available to the public and media upon request. E-mail sent or received on the county system will be considered public and will only be withheld from disclosure if deemed confidential pursuant to State Law.



---

**From:** Patti Zellner <[PZELLNER@PSC.STATE.FL.US](mailto:PZELLNER@PSC.STATE.FL.US)>  
**Sent:** Tuesday, May 4, 2021 8:59 AM  
**To:** Web Email - County Administration <[County-Admin@santarosa.fl.gov](mailto:County-Admin@santarosa.fl.gov)>  
**Cc:** Laura King <[LKing@PSC.STATE.FL.US](mailto:LKing@PSC.STATE.FL.US)>; Phillip Ellis <[PELLIS@PSC.STATE.FL.US](mailto:PELLIS@PSC.STATE.FL.US)>; Donald Phillips <[DPhillip@psc.state.fl.us](mailto:DPhillip@psc.state.fl.us)>; Damian Kistner <[DKistner@psc.state.fl.us](mailto:DKistner@psc.state.fl.us)>; Patti Zellner <[PZELLNER@PSC.STATE.FL.US](mailto:PZELLNER@PSC.STATE.FL.US)>  
**Subject:** DN 20210000-OT - Review of the Ten-Year Site Plans - Comment Request (049)

Dear Mr. Schebler,  
Please find attached your copy of the 2021 Ten-Year Site Plans – Comment Request letter dated May 3, 2021, filed with the Florida Public Service Commission Clerk today.

Thank you,  
Patti Zellner  
Administrative Assistant  
Division of Engineering  
Phone: (850) 413-6208  
Email: [pzellner@psc.state.fl.us](mailto:pzellner@psc.state.fl.us)



**CAUTION:** This email originated from an **EXTERNAL SOURCE**. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

---

Florida has a very broad Public Records Law. Virtually all written communications to or from Santa Rosa County Personnel are public records available to the public and media upon request. E-mail sent or received on the county system will be considered public and will only be withheld from disclosure if deemed confidential pursuant to State Law.

---

Florida has a very broad Public Records Law. Virtually all written communications to or from Santa Rosa County Personnel are public records available to the public and media upon request. E-mail sent or received on the county system will be considered public and will only be withheld from disclosure if deemed confidential pursuant to State Law.

Environmental Groups

Vote Solar





August 25, 2021

Mr. Phillip Ellis  
Florida Public Service Commission  
Capital Circle Office Center  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850  
Email: [pellis@psc.state.fl.us](mailto:pellis@psc.state.fl.us)

Dear Chairman Clark and Commissioners:

Vote Solar respectfully offers these comments concerning Florida utilities' 2021 10-year site plans, in order to support the Commission's oversight role and encourage an electric system that is affordable, reliable, secure and clean.

Since 1974, certain electric utilities under Florida law have been required to submit to the Commission a 10-year site plan estimating their power-generating needs and the location of any proposed power plants. *See* Section 186.801, F.S.<sup>1</sup> The Commission is charged with conducting a preliminary review of each plan, classifying each as suitable or unsuitable, and may suggest alternatives to the plan. *Id.*

Florida law states that the Commission "shall review" the following elements of each plan: the need for electrical power; the effect on fuel diversity within the state; the environmental impact of each power plant site; possible alternatives to the proposed plan; the views of other relevant agencies; the extent to which the plan is consistent with the state comprehensive plan; state data on energy availability and consumption; the amount of renewable energy resources the utility produces or purchases; the amount of renewable energy resources the utility plans to produce or purchase over the 10-year planning horizon and the means by which the production

<sup>1</sup> Utilities are only required to submit TYSPs if (1) their generating capacity is greater than 250 MW or they are planning to construct a 75 MW or greater new generating facility at least 3 years prior. In 2021, 11 out of Florida's 58 utilities submitted TYSPs.

or purchases will be achieved; and how the production and purchase of renewable energy resources impact the utility's present and future capacity and energy needs. Fla. Stat. Ann. § 186.801. Under Florida law, 10-year site plans are “tentative information for planning purposes only and may be amended at any time” by utilities. *Id.* As permitted by statute, the Commission has implemented regulations concerning the 10-year site plans. *See* Fla. Stat. Ann. § 186.801; Rule 25-22.070, F.A.C.

As Vote Solar reviewed utilities' 2021 plans, we saw significant diversity among the plans with respect to their transparency, incorporation of sound planning principles, clean energy commitments and preparedness to adapt to climate risk. During this analysis, several important cross-cutting themes also emerged among many of the utilities' plans. Below, we present these themes as “**Five Questions the Commission Should Ask**” as it reviews the 2021 plans. We hope that this framework assists the Commission and its staff in its important oversight role.

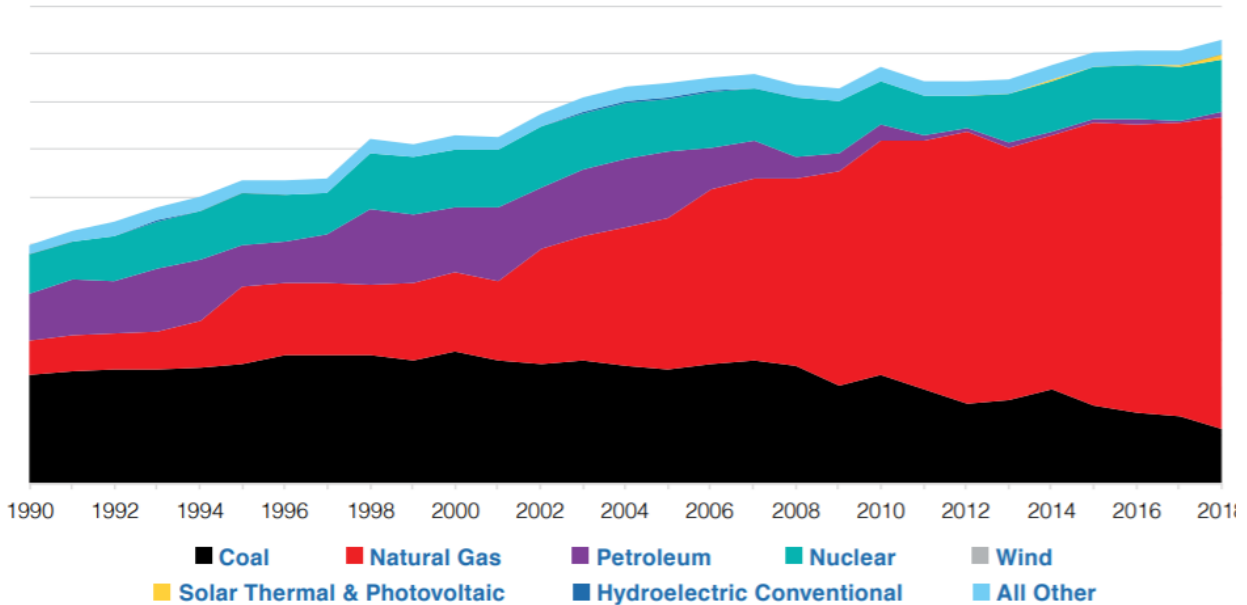
### **“Five Questions the Commission Should Ask as it Reviews TYSPs”**

#### **1. How do utilities plan to address gas over-dependence?**

Florida's share of natural gas generation places it among the top four states in the country, and its **70% reliance on gas is double the national average**. The end result is that each year, some \$5 billion dollars leave Florida's economy to pay for fuel (accounting for about \$1 out of every \$4 spent by Floridians on electric bills). Several of Florida's utilities plan to expand their reliance on gas generating plants even more over the next decade, potentially putting Florida consumers on the hook for fuel price shock as well as stranded asset risk as lower-risk alternatives like solar power threaten to make today's gas investments obsolete. Vote Solar recently released a report on these issues entitled *The Costs and Risks of Florida's Dependence on Natural Gas*, which we have attached for your convenience.

The Legislature, in requiring 10-year site plans to be filed, stated that the Commission “shall review” each plan's effect on fuel diversity within the state. *See* Fla. Stat. Ann. § 186.801. Under this authority, we encourage the Commission to scrutinize utilities' over-reliance on gas.

## Florida's Total Electricity Generation Mix Since 1990, by Fuel

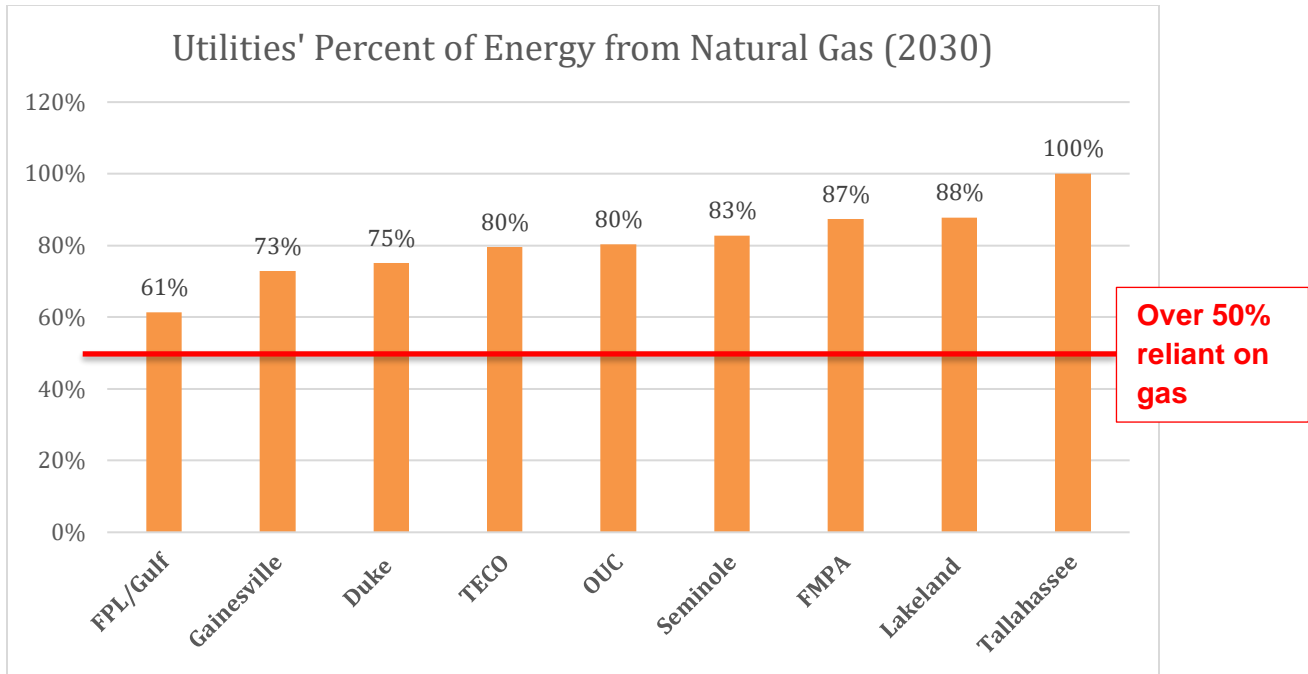


Source: Vote Solar analysis of 2019 U.S. Energy Information Administration Data

Since 1990, the vast majority of all installed capacity - over 33 GW - has been in gas plants; and Florida utilities plan to add even more gas generation in this decade. According to utilities' 2021 filings, below is the percentage of total energy from natural gas projected for 2030:

- Seminole Electric: 82.7%
- Duke Energy: 75.1%
- Tampa Electric: 79.6%
- FMPA: 87.4%
- FPL/ Gulf Power: 61.4%
- OUC: 80.3%
- Lakeland Electric: 87.8%
- City of Tallahassee: over 100%<sup>2</sup>
- Gainesville Regional Utilities: 72.9%

<sup>2</sup> This total is due to the fact that Tallahassee, as a smaller municipal utility, must run its gas plants at certain minimum thresholds in order to avoid shutting them down; as a result, Tallahassee sometimes generates excess energy that it sells on the wholesale market.



Over this decade, FPL projects the cost of natural gas will go up, increasing by 32% from \$2.44/MMBtu in 2020 to \$3.57 in 2030.<sup>3</sup> If gas prices do increase by a third, Floridians could see their electric bills increase by over \$200/year. In contrast, Jim Robo, CEO of NextEra Energy, has described solar as being “very, very competitive” compared to gas-fired generation, and notes “a significant opportunity in almost every part of the country where batteries are now more economic than gas-fired peakers, even at today’s natural-gas prices.”

**We strongly believe that utilities should not have more than 50% of their energy mix coming from gas, consistent with national averages, and should not be continuing to invest in new gas capacity once they hit that limit.** All ten of the utilities analyzed will remain more than 50% reliant on natural gas through 2030, representing a major risk to consumers as well as a significant climate impact. Of these utilities, six plan to *increase* their reliance on natural gas, which typically corresponds to a decreasing amount of coal power generation. While reducing coal use is important, immediately replacing it with natural gas brings on a slate of new problems. As mentioned in Vote Solar’s 2020 report titled “The Costs and Risks of Florida’s Dependence on Natural Gas,” Florida utilities are capturing only a small fraction of their energy efficiency potential and ignoring the cost-effectiveness and environmental benefits of solar energy through such a heavy commitment to natural gas. Based upon the current site plans, 68.2% of Florida’s total energy usage in 2030 will still come from natural gas, with the average utility receiving 78.1% of its individual energy portfolio from gas. This level of reliance means that about \$5 billion dollars will continue to leave Florida each year to pay for gas imports.

<sup>3</sup> See FPL responses to 2021 TYSP discovery requests, FPSC Docket 2020-0000, Staff Data Request No. 71.

Florida's regulators should carefully weigh both fuel price and stranded asset risks in assessing the prudence of continued investments of ratepayer funds in gas.

Florida regulators should also investigate the risks evidenced by the February 2021 cold snap in Texas. There is broad consensus that failures across Texas' natural gas operations and supply chains due to extreme temperatures were the most significant cause of the power crisis that left millions of Texans without heat and electricity.<sup>4</sup> As temperatures averaged nearly 30 degrees lower than normal, natural gas production in Texas fell almost 45% between February 13 and February 17, according to HIS Markit.<sup>5</sup> Twenty of the fifty gigawatts of gas plants that ERCOT expected to be online in February weren't, due to operators' failure to winterize (lines froze and systems couldn't run) or due to the fact that gas was simply unavailable.<sup>6</sup> Even as far away as Florida, FPL was forced to run some gas plants on distillate oil due to price hikes and gas unavailability. Florida is even more dependent on natural gas than Texas: only fifty-two percent of the electricity generated in Texas in 2020 was from natural gas, much less than Florida's current *seventy percent* reliance on gas. We encourage the Commission and Florida utilities to closely study the causes of the Texas blackouts, and whether there are lessons learned that could help Florida avoid similar gas plant unavailability.

## 2. How does Florida stack up on clean energy investments?

According to the U.S. Energy Information Administration, solar is now the cheapest generating resource available to Florida utilities, but many utilities continue to treat it as a niche energy source. While solar energy is increasing across Florida over the next decade, the state has a lot of catching up to do, and a whole lot of runway to do it.

Today, despite significant gains over the past year, most Florida utilities still have less solar (in terms of watts per customer) than peer Southeast utilities Duke Energy Progress, Dominion Energy SC, Duke Energy Carolinas and Georgia Power. Duke Energy Florida still falls below the Southeast average in terms of solar per customer.<sup>7</sup> For comparison, Duke Energy Progress in the Carolinas has 1,952 solar watts per customer; FPL has 448 and Duke Energy Florida only has 272. As an upside, it means that **utilities like Duke Power have demonstrated an ability to integrate and harness nearly ten times as much solar energy in the Carolinas as they have in Florida** -- creating valuable lessons learned that will allow for smooth integration of renewables in our state.

<sup>4</sup> <https://www.dallasnews.com/news/weather/2021/02/17/texas-largely-relies-on-natural-gas-for-power-it-wasnt-ready-for-the-extreme-cold/>.

<sup>5</sup> <https://www.eia.gov/todayinenergy/detail.php?id=46896>.

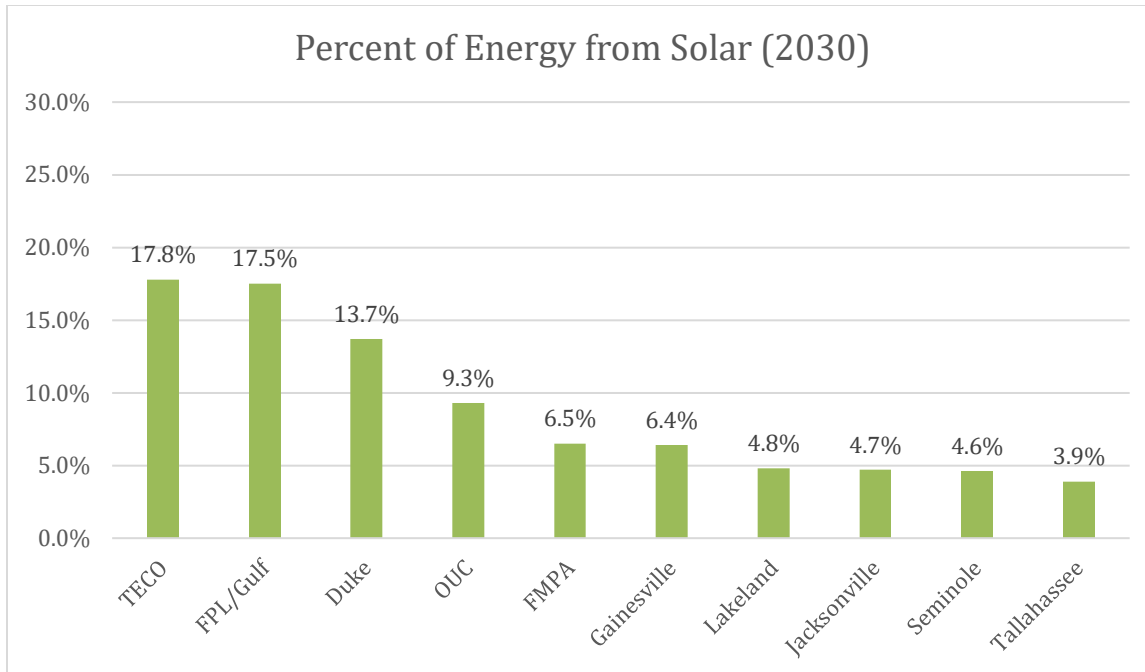
<sup>6</sup> <https://www.texasmonthly.com/news-politics/texas-blackouts-natural-gas/>.

<sup>7</sup> Southern Alliance for Clean Energy, *Solar in the Southeast Annual Report (2021)*, available at <https://cleanenergy.org/wp-content/uploads/Solar-in-the-Southeast-Report-June-2021.pdf>.



Current forecasts also project Florida's utilities providing only 14.2% of the state's total energy consumption through solar by 2030, which is well below most other [state utility standards](#) and is also woefully inadequate if the U.S. is to reach its goal of [100% carbon-free electricity](#) by 2035. The total amount of energy forecasted from renewables as a whole only reaches 15.1%, indicating that expanding solar generation is key to improving Florida utilities' carbon emissions. As a benchmark, we believe that each utility should be aggressively moving towards **at least 30% renewable energy by 2030**. To date, Florida utilities have demonstrated that significant solar investments can be made that put downward pressure on rates, creating cumulative present value revenue requirement (CPVRR) benefits for all customers. As solar costs continue to decline, along with battery storage, the value proposition of renewable energy will continue to increase for Florida ratepayers. One easy way for the Commission to assess future savings would be to ask utilities to model a 30% by 2030 alternative plan in next year's TYSP filings (this recommendation is discussed further on page

FPL, which plans for the highest percentage of renewable energy among Florida utilities in 2030 (17.5%), is only a little over halfway to that goal. Peer utilities across the country, from Xcel and NIPSCO in the Midwest to PG&E in California, are voluntarily planning for renewable energy as a reliable and economic energy resource. States such as California, Hawaii, North Carolina and Arizona have navigated the integration of clean energy to date at significantly higher solar penetrations than Florida, and have demonstrated the predictable value that these resources add to the grid. These path-breaking states should give Florida regulators peace of mind that our state can confidently invest in significant amounts of renewable energy over the next decade -- much more than utilities are currently planning for.



Vote Solar also believes that how renewable energy is procured for customers matters, and the Florida legislature agrees. As part of their 10-year site plan filings, the Legislature requires utilities to provide information about how renewable energy is going to be procured (a requirement that it did not specify for traditional generating resources). *See* Section 186.801(2)(i), F.S. (the Commission “shall review...[t]he amount of renewable energy resources the utility plans to produce or purchase over the 10-year planning horizon and ***the means by which*** the production or purchases will be achieved.”) (emphasis added).

Markets work -- and Florida utilities should be aggressively relying on market options to procure more affordable power, instead of solely relying on self-built capacity. Third-party developed and owned projects have shown themselves to be the most cost-effective option for customers time again in competitive solicitations across the Southeast, including in nearby Georgia.<sup>8</sup> Florida utilities should focus on adding additional solar capacity through PPAs, saving consumers money and becoming more environmentally friendly. Eight of the ten utilities currently have no PPAs lined up through 2030, much less any additional solar PPAs. We encourage the Commission to question utilities’ plans when they exclude consideration of market alternatives. Utilities’ financial incentives should be aligned with customer value to maximize system benefits when renewables are being added to the grid.

<sup>8</sup> *See, e.g.*, <https://dailyenergyinsider.com/news/11265-georgia-power-awards-power-purchase-agreements-three-solar-projects/>.

### 3. Are Florida utilities preparing for a carbon-constrained world?

There is broad consensus among market analysts and large, sophisticated utilities that carbon regulation is a matter of when, not if. Building a future carbon price into planning protects customers from this eventuality, helping ensure that utilities are projecting reasonable future costs on carbon-heavy generation. Some Florida utilities (including FPL and Duke) incorporate a future carbon cost into their planning, but most of the municipal utilities do not, which likely biases their planning in favor of carbon-heavy resources. Florida regulators should scrutinize the impact of these flawed assumptions on municipal utilities' plans.

A good utility helps empower its customers so they can meet their clean energy goals and keep energy bills stable. Many Fortune 500 companies have established carbon reduction goals based on market trends and evolving investor expectations, and these corporations are looking to grow in states where clean energy options are readily available. Nearly 200 global corporations have committed to 100% renewable energy, including household names like Google, Ikea, Apple, Bank of America, Coca Cola, ebay, Facebook, GM, Microsoft, Target, and Walmart.<sup>9</sup>

Florida's forward-looking utilities are seriously exploring battery storage and clean energy options for customers, but Florida's smaller utilities are generally overlooking these "next gen" technology opportunities. We specifically commend utilities like FPL, OUC and Duke Energy Florida that are offering both robust rooftop net metering programs, while simultaneously creating solar subscription programs that expand access to solar power for those customers who are unable to go solar on their homes or businesses. These options make Florida a more attractive place to live and do business.

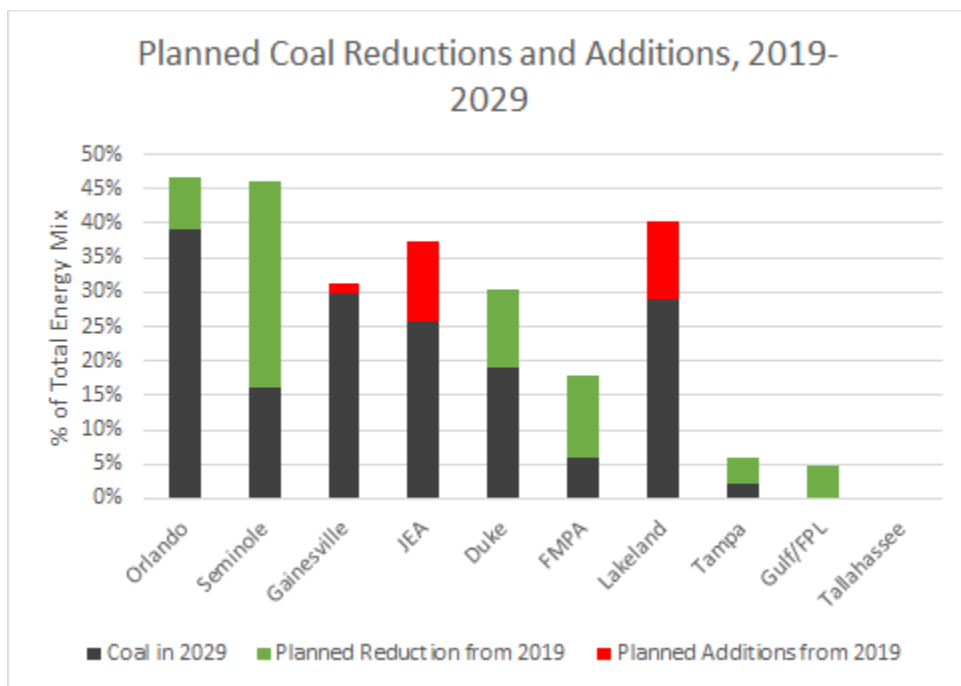
To date, the cost evaluation of energy storage has generally lacked sophistication (e.g., by not fully considering all sub-hourly capacity and ancillary services benefits) and failed to keep up with rapidly falling energy storage costs.<sup>10</sup> In March of 2019, FPL announced its plan to build the world's largest solar-powered battery in Manatee County, replacing two natural gas units and saving customers more than \$100 million dollars.<sup>11</sup> Now that battery storage has been demonstrated to be cost effective in Florida, the Commission should question gas investments that are made by utilities whose planning lacks sophistication when it comes to analyzing storage -- their plans likely ignore cheaper, carbon-neutral capacity options that are now up for the taking.

<sup>9</sup> <https://www.there100.org/companies>.

<sup>10</sup> <https://energystorage.pnnl.gov/pdf/PNNL-28627.pdf>

<sup>11</sup> <http://newsroom.fpl.com/2019-03-28-FPL-announces-plan-to-build-the-worlds-largest-solar-powered-battery-and-drive-accelerated-retirement-of-fossil-fuel-generation>

In our comments to this Commission concerning utilities' TYSPs last year, we noted that some Florida utilities were actually *increasing* coal energy over the next decade -- a trend that was sharply at odds with the rest of the country.<sup>12</sup> JEA, GRU and Lakeland all anticipated significant increases in coal energy usage in the 2020s, a decision that they did not justify based on cost in their plans.



We are encouraged to see that several utilities have since changed direction and are now planning to largely phase out coal by the end of the decade. FPL's coal reliance shrinks to 0.2% in 2030; TECO's is 1.8%; OUC's is 0%; FMPA's is 0%; Lakeland's is 0%; and GRU's is 0%.

To quote NextEra CEO Jim Robo, "There is not a regulated coal plant in this country that is economic today, full period and stop."<sup>13</sup> Coal plants are no longer economic for Florida ratepayers. Vote Solar believes that utilities should be phasing out coal to less than 5% by 2030, in line with FPL and Tampa Electric's plans. We specifically call out JEA for its 21.5% reliance on coal in 2030 (the highest in the state); Duke Energy Florida for its 9% reliance on coal in 2030; and Seminole Electric for its 7.6% reliance on coal. These utilities plan to remain significantly committed to coal through 2030 despite the overwhelming evidence that it is both more expensive and leads to more pollution than other energy sources. Utilities such as Lakeland Electric and Tampa Electric have made great strides, altering their previous plans in favor of phasing out coal by 2030. JEA, Duke Energy and Seminole's plans are very concerning given the market dynamics, not to mention the carbon and public health impacts of coal. We believe

<sup>12</sup> <https://www.eia.gov/outlooks/steo/report/coal.php>.

<sup>13</sup> <https://insideclimatenews.org/news/04022021/inside-clean-energy-coal-power-renewable-utilities/>.

that a utility's decision to continue to invest in coal energy warrants rejection of these utilities' plans, and at the very least, we encourage the Florida Commission to question these utilities concerning how these plans can possibly be least cost compared to alternatives.

Moreover, we urge the Commission to closely scrutinize any future investments in carbon-emitting generation. Given the national trends by electric utilities towards 100% carbon-free electricity by 2050 (or earlier), it is very likely that any carbon-emitting resources that are projected to be in operation beyond 2050 will represent stranded assets that customers will end up paying for. We specifically urge FPL, Florida's largest electric utility, to adopt a strong commitment to carbon-free generation by 2050 or earlier, in line with TECO and DEF.

## Committed to zero-carbon by 2050



#### 4. Are utilities protecting Florida's most vulnerable ratepayers?

The cheapest kilowatt-hour is the one that never gets used. Quite simply, that makes energy efficiency the cheapest energy source available to Florida's electric utilities. But according to the American Council for an Energy Efficient Economy (ACEEE), many Florida utilities rank far below their peers in terms of energy efficiency investments. The 2020 ACEEE Utility Energy Efficiency Scorecard reviews the efficiency investments of 52 utilities across the country. Of that list, TECO, Duke Energy Florida and FPL all rank in the bottom 8 utilities, with TECO at #46, DEF at #48 and FPL at #51 (ahead of only one utility - Alabama Power).<sup>14</sup> This

<sup>14</sup> [https://www.aceee.org/sites/default/files/pdfs/u2004%20rev\\_0.pdf](https://www.aceee.org/sites/default/files/pdfs/u2004%20rev_0.pdf)

lack of investment is also tied to Floridians having higher than average electricity bills than the national average.<sup>15</sup>

Energy efficiency investments matter now more than ever, as many Floridians are struggling to pay their electric bills due to the economic fallout from COVID. Consumer protection needs to be top priority right now during the coronavirus pandemic. Energy efficiency should be utilities' first investment before adding additional generation capacity, and utilities should be targeting **a minimum of 1% of annual energy savings**.

Disconnections are an important and unfortunate development from 2020-2021 that should be addressed in utilities' plans. All of the consumer-facing utilities except Gainesville Regional Utilities and the City of Tallahassee Utilities were exceedingly aggressive in resuming disconnections following the onset of the COVID-19 pandemic. These two utilities expanded low-income grant programs, didn't disconnect customers who applied for such aid, and in Tallahassee's case, waited until April 2021 before resuming disconnections. However, the majority of Floridians were completely unprotected from severe financial stress and losing power. This lack of protection occurred despite the fact that 35 states around the country implemented long disconnection moratoria and many of them also require or incentivize meaningful outreach to low-income customers.

Florida Power and Light disconnected nearly 500,000 customers from October 2020 to April 2021, with around 50,000 of those customers being disconnected without restoration. Duke Energy Florida reported disconnections equating to around 3% of its customers, nearly 64,000, from September 2020 to January 2021. Other utilities like the Tampa Electric Company, the Jacksonville Electric Authority, the Orlando Utilities Commission, and Lakeland Electric immediately began disconnecting thousands of customers a month as early as June and July 2020, during the height of this ongoing pandemic. These early disconnections were particularly severe due to the heat of the summer, which along with COVID-19 makes a lack of power life-threatening. Additionally, few utilities forgave late fees, expanded low-income support programs, or took other important measures to alleviate the burden of the pandemic on customers. Florida consumers deserve better protection from disconnections, especially during the heat of the summer and during unusual events like the COVID-19 pandemic that drastically increase unemployment rates and financial stress on residents.

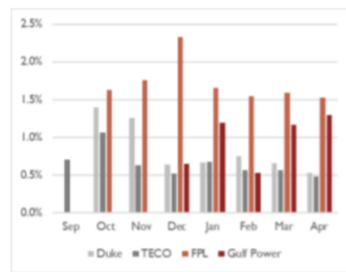
Vote Solar also believes that utilities should be mobilizing energy saving programs to provide extra bill support and stability to customers who are in arrears on bills, in addition to halting all shut-offs through the end of hurricane season. We strongly support emergency bill relief programs for customers who are in arrears during this time, which should rely on a

<sup>15</sup> <https://www.eia.gov/todayinenergy/detail.php?id=34932>

combination of arrearage management, bill forgiveness incentives for consistent repayment, and targeted efficiency programs.

## Florida Disconnections During COVID-19

Many Florida utilities resumed disconnections long before the economic effects of the pandemic became less severe, leading to very high disconnection rates.

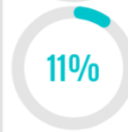


Of a group of 18 peer utilities, Florida's four largest utilities resumed disconnections faster than all but one other utility.

Even before the pandemic, energy burden was a serious issue:



20% of households reduced or forwent necessities to pay their energy bills



11% of households kept their house at an unhealthy or unsafe temperature

Aggressive disconnection rates even worsened the spread of COVID: a nationwide disconnection moratorium from the start of the pandemic would have reduced infection rates by 8.7% and deaths by 14.8%.

**111K**

The number of customers Florida utilities disconnected between July and October 2020

**18K**

The number of said customers disconnected without restoration

**\$63M**

Total 2014-2019 spending of Florida's four largest utilities on campaign contributions and lobbying

**10.6%**

Average 2021 return on equity for Florida's three largest utilities, over 1% above the national average

**75%**

The percentage of states that, unlike Florida, have a seasonal or temperature-based disconnection moratorium in place

**Beyond their aggressive disconnection policies, Florida utilities are also failing to help consumers through effective outreach and low-income assistance programs.**

**46-51**

TECO, DEF, and FPL's rankings on energy efficiency out of the 52 largest U.S. utilities



## 5. How can Florida modernize its resource planning review?

There are actions that the Commission can take this year within its existing statutory authority to modernize its review process concerning Florida utilities' plans. The Commission can begin by formalizing the 10-year site plan review process and shoring up opportunities for public and stakeholder engagement. *See* Section 186.801(2), F.S. (the commission may adopt rules governing the method of submitting, processing, and studying the 10-year plans).

We recommend that the Commission strengthen the 10-year site plan process by making 10-year site plans part of a docketed proceeding, similar to FEECA dockets; providing a clear opportunity and timeline for public comments; requiring utilities to file sworn testimony associated with their plans; allowing for intervention, discovery and the filing of non-utility expert testimony; and subjecting utilities' plans to cross-examination.

We also urge the Commission to require utilities to file both preferred plans and alternatives for the Commission to review, beginning in 2021, with clear price per GWh comparisons for each plan. *See* Section 186.801(2)(d), F.S. (the Commission "shall review... [p]ossible alternatives to the proposed plan"). These improvements will better ensure that the Commission has the information it needs to meaningfully regulate the utilities' resource decisions to meet the public interest.

In terms of the Commission's substantive review, we encourage the Commission to exercise the following legislatively granted authority:

- Making comments and recommendations to utilities concerning their plans (*see* Section 186.801(2), F.S. (states PSC may "suggest alternatives"); Fla. Admin. Code Ann. r. 25-22.071(4) (the Commission "will report its findings, along with any comments or recommendations"). These recommendations can be directed to utilities' current or future plan filings.
- Rejecting unsuitable plans and sending plans back for additional data to be provided (Section 186.801(2), F.S. ("the commission shall make a preliminary study of such plan and classify it as "suitable" or "unsuitable."); Fla. Admin. Code Ann. r. 25-22.071(5) (unsuitable plans can later be deemed suitable with additional data).

Florida should also consider beginning a holistic review of its electric planning process, which does not appear to have undergone substantive review since the 1970s. Some best practices for resource planning may require legislative reforms in order to implement. Such improvements include, but are not limited to: increasing the 10-year time period to 15 or 20 years, in keeping with many other states; making plans binding and subject to both review and amendment by regulators; and requiring utilities to conduct full integrated resource planning



with transparency around least cost, least risk plans and alternatives. Without a binding, long term planning process with thorough vetting, the Commission's ability to regulate the utilities in the public interest will be hamstrung.

Such a holistic review would provide an opportunity to rethink system needs in a future likely dominated by renewable energy, new technology, and engaged consumers.<sup>16</sup> Battery storage, EV charging demand, demand response, rooftop and utility scale solar threaten to rapidly overtake traditional supply, but traditional planning approaches are ill-equipped to evaluate this new reality. Planning needs to be responsive to new reliability and flexibility needs; policy goals; new technology; customer preferences and sustainability goals; electrification; and the proliferation of distributed energy resources. *Id.* For example, electrification may DOUBLE total demand by 2050; planning processes must consider the impact of this new load on electric utilities and their customers. Similarly, instead of assuming that gas is the best option to replace retiring coal plants, modern planning should allow for portfolios of clean energy resources (solar, bulk storage and controllable demand) that, when combined, can offer the same energy, flexibility and capacity needs at less cost than gas. *Id.* The best way to ensure fair access for all resources to compete is to require all-source, competitive procurements for all new capacity investments, thus inviting innovation into utility plans to maximize savings for consumers.

Going forward, we encourage a conversation about how Florida can ensure it is well situated for next generation energy resource planning. We have provided a list of resources in an appendix that we hope will prove helpful to this end.

We appreciate the Commission's attention to these important issues, and hope that these comments aid the Commission in its review of Florida utilities' long-term plans.

Sincerely,



Katie Chiles Ottenweller  
Southeast Director  
Vote Solar

<sup>16</sup> The Brattle Group, *The Next Generation of Energy Resource Planning: Rethinking System Needs in a Future Dominated by Renewables, New Tech, and Engaged Customers* (2019), available at [https://brattlefiles.blob.core.windows.net/files/16833\\_the\\_next\\_generation\\_of\\_energy\\_resource\\_planning.pdf](https://brattlefiles.blob.core.windows.net/files/16833_the_next_generation_of_energy_resource_planning.pdf).

Attachment 1:

**Electric Utility Best Practice Planning Resource List**

**Brattle Group (2019), [The Next Generation of Energy Resource Planning](#)**

**RAP & Synapse (2013), [Best Practices in Integrated Resource Planning](#)**

**LBNL (2016), [The Future of Electricity Resource Planning](#)**

**NARUC electricity planning task force library of resources [here](#)**



Florida Citizens

Mr. Nathan A. Skop



**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

In re: Review of Ten-Year Site Plans of  
Electric Utilities

DOCKET NO.: 20210000 (Undocketed)

FILED: August 18, 2021

**WRITTEN COMMENTS RELATED TO THE FILING OF THE  
GAINESVILLE REGIONAL UTILITIES TEN-YEAR SITE PLAN FOR 2021**

Nathan A. Skop, as a GRU residential customer, and pursuant to the Purpose and Procedure section of the Amended Notice of Commission Workshop dated August 4, 2021, hereby files written comment to the Gainesville Regional Utilities (“GRU”) Ten-Year Site Plan (“TYSP”) for 2021 in the above captioned docket requesting that the Florida Public Service Commission (“Commission” or “FPSC”): (1) open a formal docket to investigate the adequacy, reliability, and resiliency of the GRU electric system, and (2) order GRU to amend its 2021 TYSP filing to clarify omissions and information submitted to the Commission as set forth within the written comments provided herein. The written comments providing the basis for the requested Commission action are set forth as follows:

**I. SINGLE POINT ELECTRIC SYSTEM FAILURE**

On March 3, 2021, the GRU General Manager sent an e-mail to the Gainesville City Commission communicating information from GRU Chief Operating Officer Tom Brown relating to the siting of the Origis solar project. Within the body of the subject e-mail, GRU advised the Gainesville City Commission that:

- “GRU has two transmission lines that run from the North at Deerhaven around the city to the East. GRU has one transmission line that runs from Deerhaven around to the West to Parker substation.”

- **“If/when GRU losses the singular west circuit, all the power has to be wheeled through the east circuits. When this occurs, depending on system load, we come close to exceeding the thermal limits of the East transmission lines.”**  
(Emphasis Added).
- **“The solution on would be to build a second T-line around the west.** The towers on the west side were not constructed with a second line in mind. They would have to be modified to allow for the second line. **Cost would be in 25MM range** (if my memory serves me correctly).” (Emphasis Added).

A true and correct copy of the e-mail sent by GRU to the Gainesville City Commission is attached herein as Exhibit A.

Ironically, Section 1.2 (Transmission), Section 1.3 (Distribution), and Section 3.4 (Distribution System Additions) of the 2021 GRU TYSP dated April 1, 2021 fail to disclose and discuss the GRU assertion that the reliability and resiliency of the entire GRU electric system is seemingly at risk from a single point transmission line failure. Additionally, in Section 1.2.2 (Transmission Lines) of the 2021 GRU TYSP, GRU states that, “GRU participates in Florida Reliability Coordinating Council, Inc. (FRCC) studies that analyze multi-level contingencies. Contingencies are occurrences that depend on changes or uncertain conditions and, as used here, represent various equipment failures or fault conditions that may occur.” Furthermore, in Section 1.2.3 (State Interconnections) of the 2021 GRU TYSP, GRU claims that, “The System is planned, operated, and maintained to be in compliance with all FERC, NERC, and FRCC requirements to assure the integrity and reliability of Florida’s Bulk Electric System (BES)”.

In response to a public records request, GRU stated that GRU had no responsive documents relating to GRU notifying the FPSC, FRCC, SERC, and/or NERC regarding this electric system reliability and resiliency issue. Despite requesting approval for a \$81 million dollar Advanced Metering Infrastructure (“AMI”) capital project that provides no tangible return on investment for GRU customers, GRU was also unable to produce any records over the past five (5) years associated with GRU requesting approval of a capital project (e.g., \$25 million) relating to installing a second transmission line to address the alleged single point failure condition that GRU failed to communicate to regulatory authorities.

Pursuant to Section 366.05 (7) and 366.05 (8), Florida Statutes, the Commission has exclusive jurisdiction relating to electric system reliability, adequacy, and resiliency for all electric utilities in the state of Florida, including municipal utilities.

Section 3.2 (Reserve Margin) of the 2021 GRU TYSP dated April 1, 2021, further illustrates that GRU has an excessive reserve margin (if not the highest in the state) which greatly exceeds the 15% capacity reserve margin by the Commission pursuant to Rule 25-6.035, Florida Administrative Code.

Most importantly, transmission and electric system reliability that is so threatened by a single point failure and the limitations alleged by GRU management should be immediately addressed to ensure adequate reliability and resiliency of the GRU electric system prior to adding additional generating capacity and pursuing far more costly discretionary capital projects (i.e., AMI). The recent ERCOT winter storm outage further illustrates the need



for the Commission to exercise its jurisdiction related to this matter to ensure the adequacy, reliability, and resiliency of the GRU electric system.

Based upon the above, the Commission is respectfully requested to open a formal docket to investigate the adequacy, reliability, and resiliency of the GRU electric system. Upon a finding of probable cause that an inadequacy exists, the Commission should order GRU to take corrective action to make the necessary improvements to ensure the adequacy, reliability, and resiliency of the GRU electric system is maintained for the benefit of GRU customers.

## **II. DUAL FUEL UPGRADE (DEERHAVEN 2)**

The Deerhaven 2 (“DH2”) unit is identified as a 228 MW baseload unit within the 2021 GRU TYSP. On Section 2.51 (Page 25) of the 2021 GRU TYSP dated April 1, 2021, GRU stated that, “In late 2020, GRU began a *dual fuel upgrade on Deerhaven Unit 2 to allow it to be able to operate fully on natural gas.*” (Emphasis Added). During the recent Gainesville City Commission meeting on July 19, 2021, GRU Chief Operating Officer Tom Brown claimed (in response to my question) that GRU never represented that DH2 could operate fully on natural gas stating that, “I don’t believe we ever represented the plant would be capable of 100% fire on gas”. The GRU claim is seemingly contradicted by the representations that GRU made to the Gainesville City Commission when seeking approval of the dual fuel upgrade project before the City Commission on July 16, 2020, along with the representation that GRU made to the FPSC within Section 2.51 (Page 25) of the 2021 GRU TYSP. Most recently, GRU updated the City Commission on the DH2 dual fuel upgrade stating:

“The retrofit project has gone well from standpoint of being able to burn natural gas up to 175 MW of load. The outstanding issue is we have not been able to get the main gas valve to operate in automatic mode as required. We have operated the valve in manual with no issues, and the OEM for the valve states that the valve actuator capability is inadequate to put valve in auto. We are working with the OEM to resolve the valve actuator issue design. Once this issue is resolved we will be conducting a full load test of DH2 to determine maximum load on natural gas, as well as the associated heat rate curves. [sic] s going very well.”

Based upon the inconsistencies identified above, the Commission should order GRU to clarify the statement that GRU made to the FPSC within Section 2.51 (Page 25) of the 2021 GRU TYSP relating to the ability of DH2 to operate fully on natural gas at the baseload rated capacity of 228 MW.

**WHEREFORE**, the Commission is respectfully requested to: (1) open a formal docket to investigate the adequacy, reliability, and resiliency of the GRU electric system, and (2) order GRU to amend its 2021 TYSP filing to clarify omissions and information submitted to the Commission as set forth within the written comments above.

**[Remainder of Page Intentionally Blank; Signature Page Follows]**

Respectfully submitted this 18<sup>th</sup> day of August 2021.

/s/ Nathan A. Skop  
Nathan A. Skop, Esq.  
Florida Bar No. 36540  
420 NW 50<sup>th</sup> Blvd.  
Gainesville, FL 32607  
Phone: (561) 222-7455  
E-mail: n\_skop@hotmail.com

**GRU Residential Customer**

## **EXHIBIT A**

## : Message View

[Back to message results](#) | [Download Message \(.eml\)](#)

Date 3/4/2021 3:29:35 PM  
Received:

---

To: citycomm

---

Cc: DL\_Utility Advisory Board

---

From: Bielarski, Edward J

---

Subject: Origis solar siting facts

---

Attachments:

---

Message: Mayor, Commissioners and UAB members;

Tom Brown has shared some of the technical challenges GRU considered when Origis responded to the Invitation to Negotiate (ITN), as reflected as follows:

- In the ITN, GRU told developers that the Deerhaven area would not be viewed favorably because of the technical challenges it would pose by connecting it into the switchgear in that area, as well as:
  - o A significant portion of the Deerhaven site is wetland. Permitting this as a site would be difficult. The area around Archer is higher and drier. The buffer area around Deerhaven is part of a Regulated Strategic Ecosystem known as the Hague Flatweeds. It is referred to as an environmental corridor between various ecosystems surrounding the Deerhaven site. Any development is regulated and restricted.
  - o There are about 3,577 acres of land on the entire Deerhaven property. The original site is approximately 1,300 acres which GRU owns outright. The balance of the land (2,327 acres) is owned as a buffer, but not the member rights. Weyerhaeuser ownership of the member rights will make solar development much more expensive.
  - o There is a City Ordinance with developmental restrictions on the Deerhaven property.
  - o The Fawnhaven site is an alternative site, not actually owned by GRU, proposed by Origis. It is north of the Deerhaven site. GRU recognized there are technical challenges for GRU to add this amount of generation capacity into the Deerhaven substation.
    - GRU has two transmission lines that run from the North at Deerhaven around the city to the East. GRU has one transmission line that runs from Deerhaven around to the West to Parker substation.
    - If/when GRU loses the singular west circuit, all the power has to be wheeled through the east circuits. When this occurs, depending on system load, we come close to exceeding the thermal limits of the East transmission lines.
    - The solution would be to build a second T-line around the west. The towers on the west side were not constructed with a second line in mind. They would have to be

modified to allow for the second line. Cost would be in 25MM range (if my memory serves me correctly).

- From a system reliability perspective, feeding the power into Parker provides a more diverse distribution network and reduces the probability of power disruption.

I have asked Lisa Bennett from the city attorney's office to weigh in on the legal issues you have questioned. I have asked Chuck Height in our energy supply department to gain details about Origis' public outreach program. I hope to have more to follow after more meetings this week.

Ed B

---

© 2021 - City of Gainesville, Florida. All rights reserved.