REVIEW OF THE

2022 TEN-YEAR SITE PLANS

OF FLORIDA'S ELECTRIC UTILITIES

OCTOBER 2022

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List of Ten-Year Site Plan Utilities

Name	Abbreviation
Investor-Owned Electric Utilities	
Florida Power & Light Company	FPL
Duke Energy Florida, LLC	DEF
Tampa Electric Company	TECO
Municipal Electric Utilities	
Florida Municipal Power Agency	FMPA
Gainesville Regional Utilities	GRU
JEA	JEA
Lakeland Electric	LAK
Orlando Utilities Commission	OUC
City of Tallahassee Utilities	TAL
Rural Electric Cooperatives	
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	Bituminous Coal	BIT
	Distillate Fuel Oil	DFO
	Landfill Gas	LFG
	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 (F.S.), 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, 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 2022 Ten-Year Site Plans for Florida's electric utilities, filed by 10 reporting utilities.[1]

[1] Investor-owned utilities filing 2022 Ten-Year Site Plans include Florida Power & Light Company, Duke Energy Florida, LLC, and Tampa Electric Company. Municipal utilities filing 2022 Ten-Year Site Plans include Florida Municipal Power Agency, Gainesville Regional Utilities, JEA (formerly Jacksonville Electric Authority), Lakeland Electric, Orlando Utilities Commission, and City of Tallahassee Utilities. Seminole Electric Cooperative also filed a 2022 Ten-Year Site Plan. FPL initially submitted four versions of its Ten-Year Site Plan, consisting of a Business As Usual Plan using its traditional planning methodology, a Recommended Plan using a novel extreme winter planning methodology, and two additional plans based on potential federal legislation to be used for information purposes only. On July 11, 2022 FPL submitted a letter withdrawing its Recommended Plan. Only the Business As Usual Plan was utilized for this report.

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 Electrical Power Plant Siting Act or the Electric Transmission Line Siting Act.[2] 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.

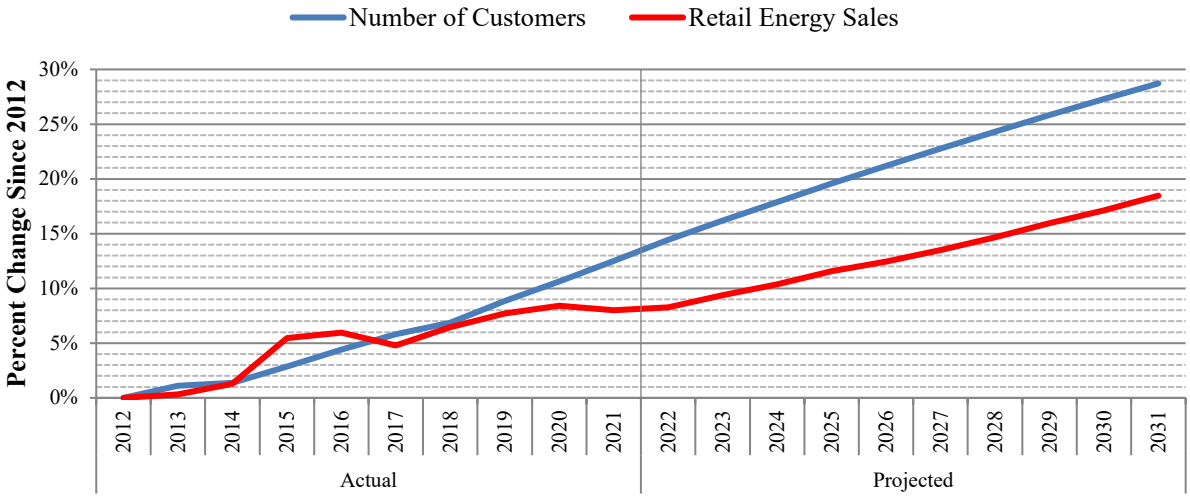
Review of the 2022 Ten-Year Site Plans

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 customer energy needs or load is a fundamental component of electric utility planning. In order to maintain an adequate and reliable system, utilities must project and prepare for changes in overall electricity consumption patterns. These patterns are affected by the number and type of customers, and factors that impact customer usage including weather, economic conditions, housing size, building codes, appliance efficiency standards, new technologies, and demand-side management. Florida's utilities use well-known and tested forecasting methodologies, which are consistent with industrywide practices used in generation planning. Figure 1 provides the historical and forecasted trends in customer growth and energy sales.

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



Source: FRCC 2022 Regional Load and Resource Plan

[2] 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 7,584 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 80 percent of Florida's existing renewables. Notably, Florida electric customers had installed 1,177 MW of demand-side renewable capacity by the end of 2021, an increase of 41 percent from 2020.

Florida's total renewable resources are expected to increase by an estimated 15,894 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, several utilities plan on adding battery storage totaling 2,462 MW which would increase firm capacity available during system peaks.

Table 1 provides a breakdown of each TYSP utility's actual 2021 and projected 2031 generation from renewables, in gigawatt-hours (GWh) and as a percentage of the net energy for load (NEL). Renewable energy as a percent of NEL is expected to increase from 5.2 percent in 2021 to 18.1 percent in 2031. Solar generation increases from approximately 67 percent of all renewable energy in 2021 to 95 percent of all renewable energy by 2031.

Table 1: State of Florida - Renewable Energy Generation

Utility	2021 Actual			2031 Projected		
	NEL	Renewables		NEL	Renewables	
	GWh	GWh	% NEL	GWh	GWh	% NEL
FPL[3]	136,757	7,187	5.26%	149,499	28,816	19.28%
DEF	45,065	1,551	3.44%	44,872	9,983	22.25%
TECO	21,033	1,252	5.95%	21,931	4,481	20.43%
FMPA	6,937	154	2.22%	6,823	757	11.09%
GRU	1,952	612	31.35%	1,967	586	29.79%
JEA	12,540	166	1.32%	13,734	82	0.60%
LAK	3,304	26	0.79%	3,516	153	4.35%
OUC	7,548	349	4.62%	8,515	4,764	55.95%
TAL	2,729	113	4.14%	2,985	116	3.90%
SEC	15,541	489	3.15%	17,711	766	4.32%
State of Florida	260,004	13,468	5.18%	279,454	50,647	18.12%

Source: FRCC 2022 Regional Load and Resource Plan & TYSP Utilities' Data Responses

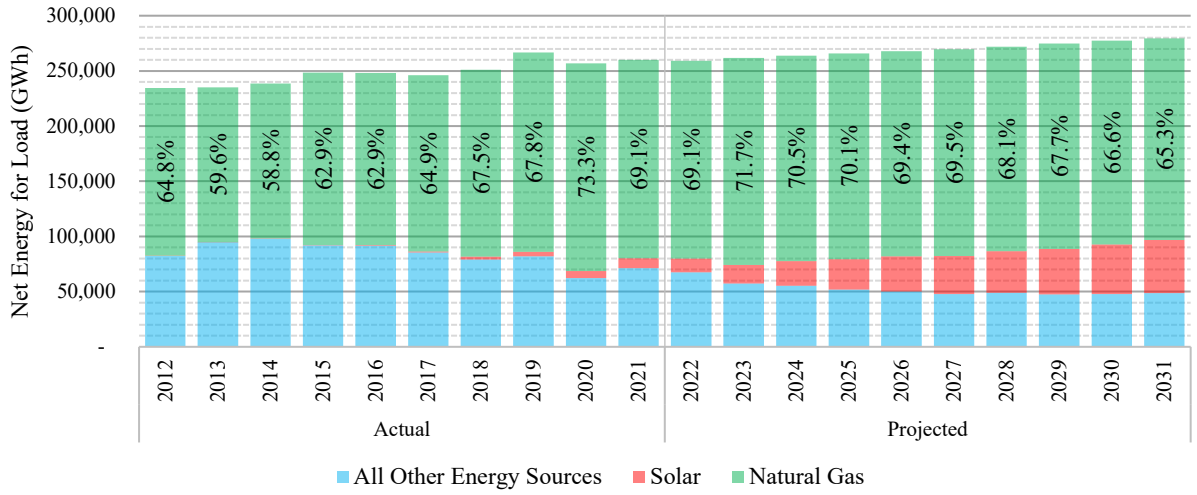
Traditional Generation

Generating capacity within Florida is anticipated to grow to meet the increase in customer demand, with an approximate net increase of 1,389 MW of traditional generation over the planning horizon, with natural gas plant additions offset by coal and oil retirements. Natural gas electric generation,

[3] FPL's values in 2021 include Gulf Power Company, which was a separate entity during 2021.

as a percent of NEL, is expected to decline from 69 percent in 2022 to 65 percent 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. The total energy produced by solar generation is projected to exceed coal-fired generation by 2023, and nuclear based generation by 2026.

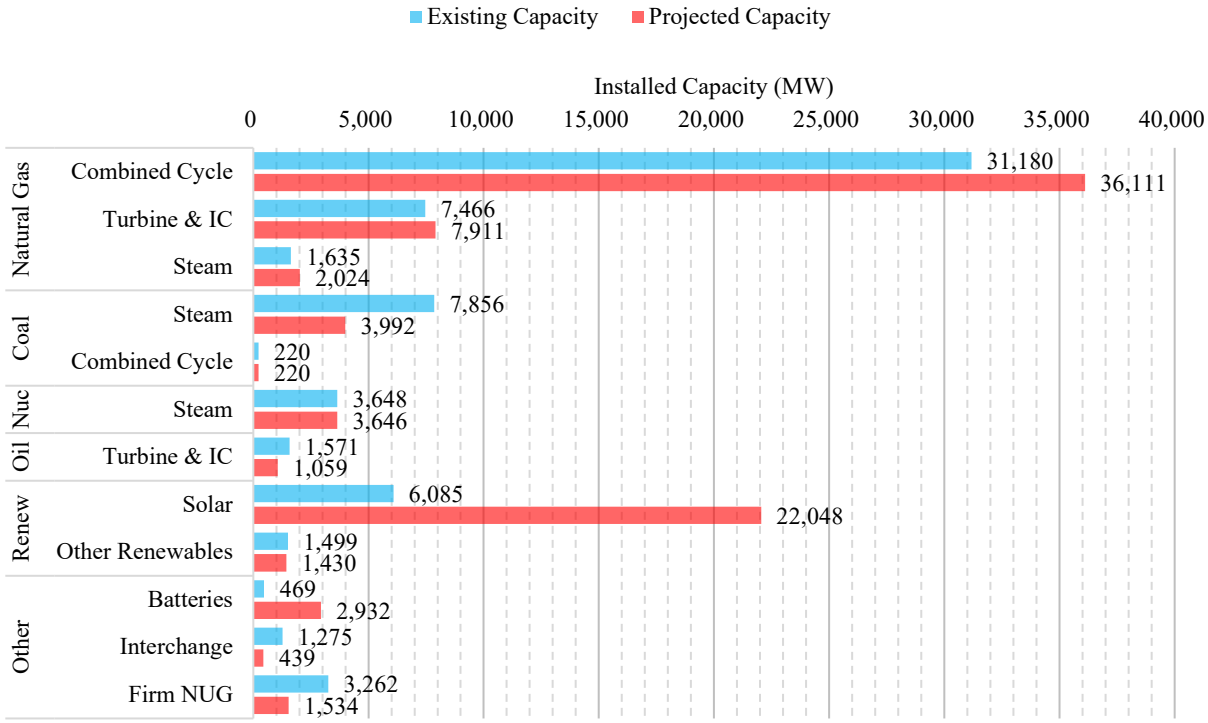
Figure 2: State of Florida - Electricity Generation Sources



Source: FRCC 2013-2022 Regional Load and Resource Plans

Figure 3 illustrates the present and future aggregate capacity mix of Florida based on the 2022 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. Solar generation is projected to be the second highest category of installed capacity by the end of the 10-year planning period.

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



Source: FRCC 2022 Regional Load and Resource Plan & TYSP Utilities' Data Responses

As noted previously, the primary purpose of this review is to provide information regarding proposed electric power plants for local, regional, 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 pursuant to Section 403.519, F.S.

Future Considerations

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.

In order to prepare for and to accommodate the inevitable increase in electric vehicle (EV) ownership, as well as investigate potential unknowns associated with EV charging, 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. Examples include: FPL's EVolution pilot program, DEF's Charge FL pilot program, and TECO's Drive Smart pilot program.

Some utilities, such as FPL and DEF, have begun to report key findings and metrics obtained through their respective EV pilot programs. This information includes: individual charging session data, peak EV charging hours, impacts to peak demand, as well as other metrics such as, revenue generated and port installation costs. Other utilities' EV pilot programs have not yet reached an age of maturity that will yield these same key findings. The Commission will continue to ask utilities to note key findings and track metrics of interest within these pilot programs in an effort to help inform the Commission about the future power needs of electric vehicles in Florida, which may require additional generating resources to meet their needs.

Conclusion

The Commission has reviewed the 2022 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. The Commission will continue to monitor the impact of current and proposed EPA Rules, expansion of EV adoption, and the state's dependence on natural gas for electricity production.

Based on its review, the Commission finds the 2022 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.

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, regional, 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

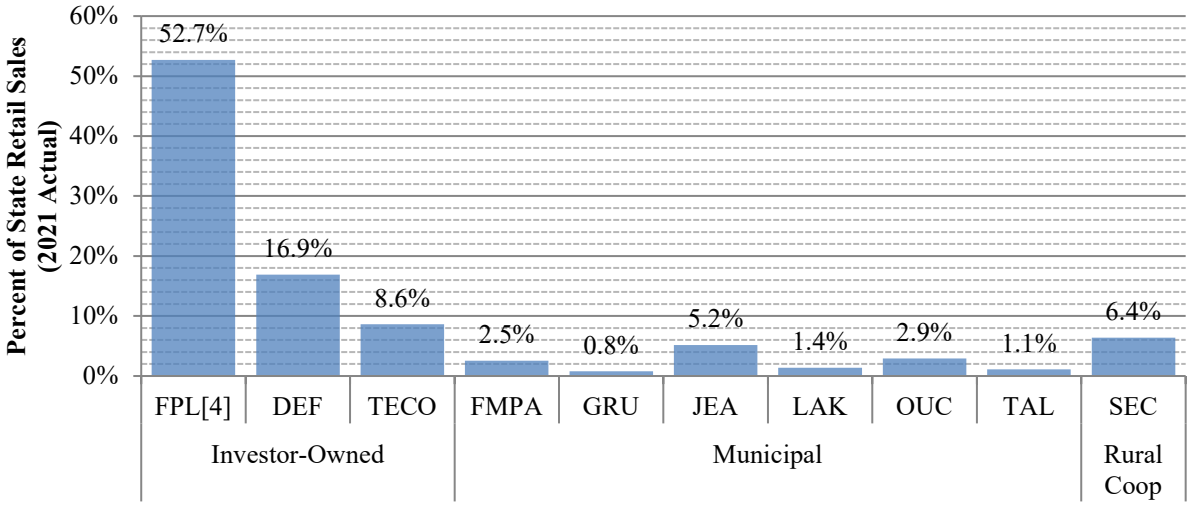
Florida is served by 56 electric utilities, including 4 investor-owned utilities, 34 municipal utilities, and 18 rural electric cooperatives. Pursuant to Rule 25-22.071(1), F.A.C., only generating electric utilities with an existing capacity above 250 MW or a planned unit with a capacity of 75 MW or greater are required to file a Ten-Year Site Plan with the Commission every year.

In 2022, 10 utilities met these requirements and filed a Ten-Year Site Plan, including 3 investor-owned utilities, 6 municipal utilities, and 1 rural electric cooperative. The investor-owned utilities, in order of size, are Florida Power & Light Company, Duke Energy Florida, LLC, and Tampa Electric Company. The municipal utilities, in alphabetical order, are Florida Municipal Power Agency, Gainesville Regional Utilities, JEA (formerly Jacksonville Electric Authority), Lakeland Electric, Orlando Utilities Commission, and City of Tallahassee Utilities. The sole rural electric

cooperative filing a 2022 Ten-Year Site Plan is Seminole Electric Cooperative. 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 2021. Collectively, the reporting investor-owned utilities account for approximately 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 Sales



Source: FRCC 2022 Regional Load and Resource Plan & 2022 Ten-Year Site Plans

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) compiles utility data 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

[4] FPL's value is the combined actual 2021 value of FPL and Gulf Power Company, which merged in 2022. Individually, FPL and Gulf Power Company represented 48.1 percent and 4.6 percent of the state's retail sales, respectively.

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.

On June 1, 2022 the Commission held a workshop regarding the annual planning process and the planning methodology for extreme winter events. Representatives from TECO, DEF, FPL, the Office of Public Counsel, Southern Alliance for Clean Energy, and Florida Rising each gave presentations. On July 11, 2022, FPL withdrew its Recommended Plan based on a novel extreme winter planning methodology and requested review of its Business As Usual Plan based on its traditional planning methodology.

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 10 reporting utilities' 2022 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.

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.

Statewide Perspective

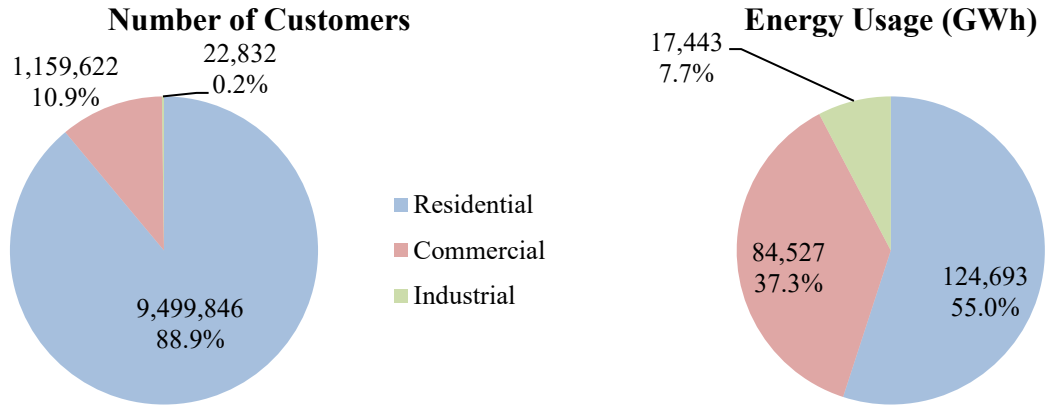
Load Forecasting

Forecasting customer energy needs or load is a fundamental component of electric utility planning. In order to maintain an adequate and reliable system, utilities must project and prepare for changes in overall electricity consumption patterns. These patterns are affected by the number and type of customers, and factors that impact customer usage including weather, economic conditions, housing size, building codes, appliance efficiency standards, new technologies, and demand-side management. Florida's utilities use well-known and tested forecasting methodologies, which are consistent with industrywide practices used in generation planning.

Electric Customer Composition

Utility companies categorize their customers by residential, commercial, and industrial classes. As of January 1, 2022, 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 2021



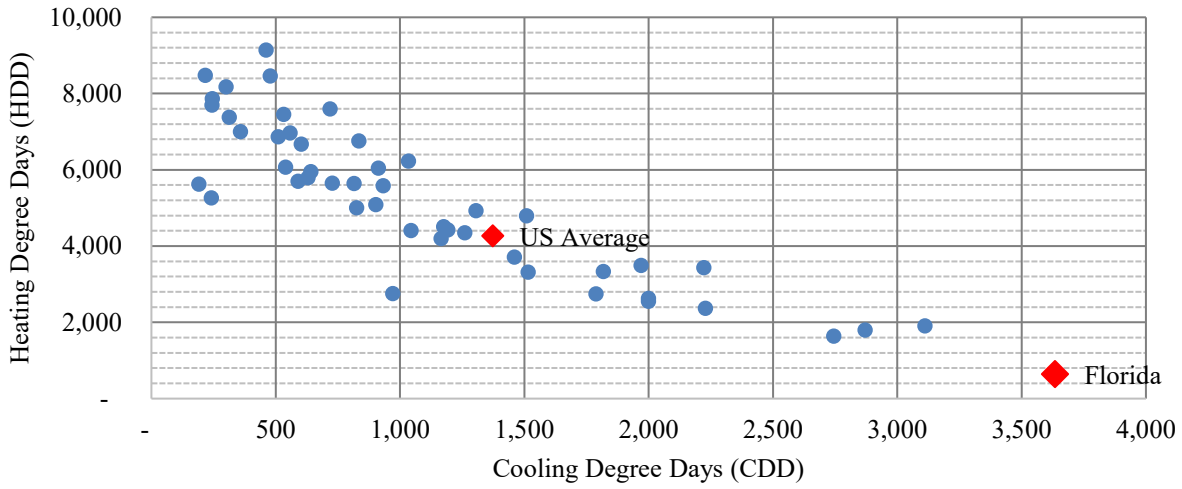
Source: FRCC 2022 Regional Load and Resource Plan

Residential customers in Florida make up the largest portion of retail energy sales. Florida's residential customers accounted for 55 percent of retail energy sales in 2021, compared to a national average of approximately 39 percent.[5] As a result, Florida's utilities are influenced more by trends in residential energy usage, which tend to be associated with weather conditions. 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. As such, most of Florida's utilities experience their peak demand during summer months. However, Florida's residential customers rely more upon electricity for heating than the national average, with only a small portion using alternate fuels

[5] U.S. Energy Information Administration July 2022 Electric Power Monthly.

such as natural gas or oil for home heating needs. Even with the low frequency of heating days required, such reliance can impact winter peak demand.

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

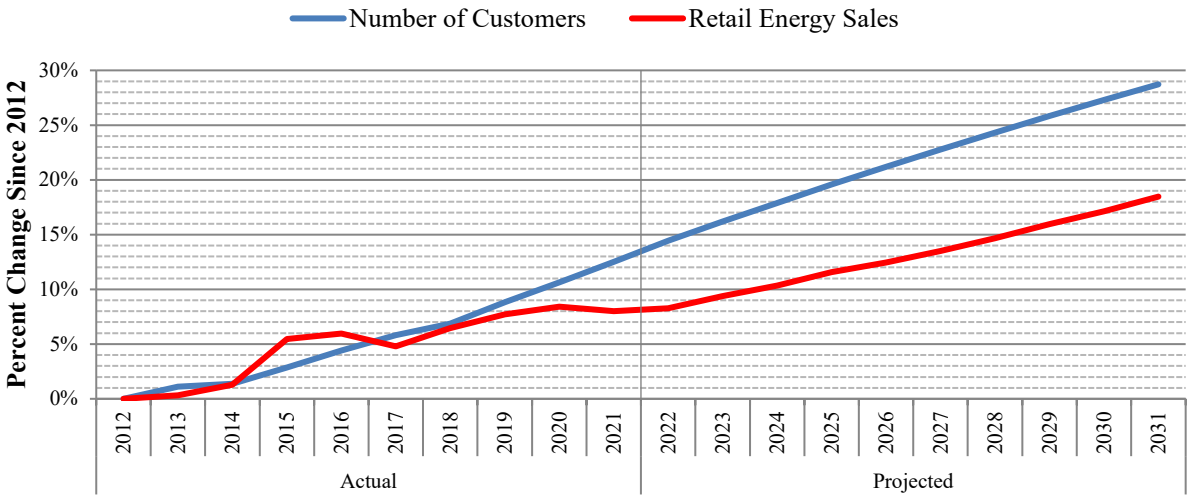


Source: National Oceanic and Atmospheric Administration Data

Growth Projections

For the next 10-year period, Florida's weather normalized retail energy sales are projected to grow at 1.01 percent per year, compared to the 0.86 percent actual annual increase experienced during the 2012-2021 period. The number of Florida's electric utility customers is anticipated to grow at an average annual rate of about 1.32 percent for the next 10-year period, the same as the 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 2022 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.

With respect to the energy consumption per customer forecasts, FPL indicated that its residential use per customer will be flat or slightly decline through 2027 due to continued improvements in equipment efficiencies; then is expected to grow by 0.4 to 1 percent from 2028 due to economic growth and increased adoption of electric vehicles. The utility also expects that its commercial use per customer will decline by 0.3 to 0.6 percent per year over the forecast horizon due to continued improvements to equipment efficiencies. DEF reported that its per customer usage for both residential and commercial classes are primarily driven by fluctuations in electric price, end-use appliance saturation and efficiency improvement, building codes, and housing type/building size. In addition, the utility is aware that more recently, the customer's ability to self-generate has begun to make an impact. A small percentage of industrial/commercial customers have chosen to install their own natural gas generators, reducing energy consumption from the power grid. Similarly, residential and some commercial accounts have reduced their utility requirements by installing solar panels behind the meter. However, the utility also noted that the penetration of electric vehicles has grown, leading to an increase in residential use per customer, all else being equal. Each of these stated items is directly or indirectly incorporated in DEF's sales forecast. TECO echoed that increases in appliance/lighting efficiencies, energy efficiency of new homes, conservation efforts and housing mix are also the primary drivers affecting the decrease in per customer usage. Other TYSP utilities likewise reported that the downward pressure to the growth trend in per customer energy consumption is due to advancements in efficient technologies,

renewable generation, and alternative energy sources, with some utilities expecting that the increased electric vehicle charging will mitigate this downward pressure to some extent.

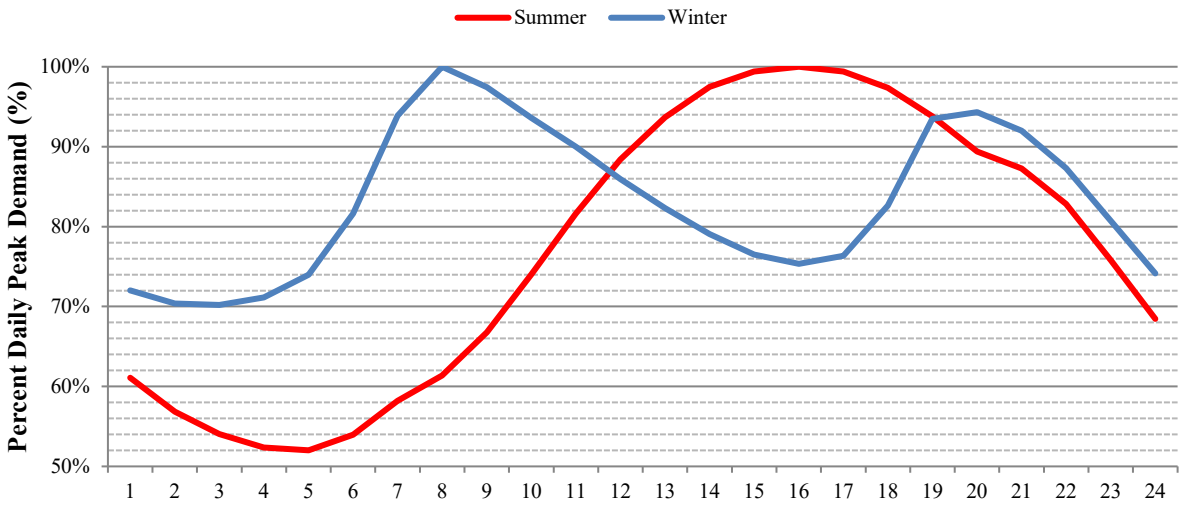
As shown in Figure 7, Florida utilities' total retail energy sales reached a historical peak in 2020. This is largely attributable to the significantly increased residential energy sales experienced by all of the utilities resulting from more people working and/or schooling from home due to the COVID-19 Pandemic. In 2021, the historical trend of Florida utilities' total retail energy sales experienced its second highest peak. As the aforementioned, Florida utilities' total retail energy sales are projected to grow at a higher annual average rate for the next 10 years than what was projected in the 2021 TYSPs. This sales growth is driven by growth in customers and business activity, as well as the expected increased level of adoption of electric vehicles.

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 cooling (summer) and heating (winter) 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

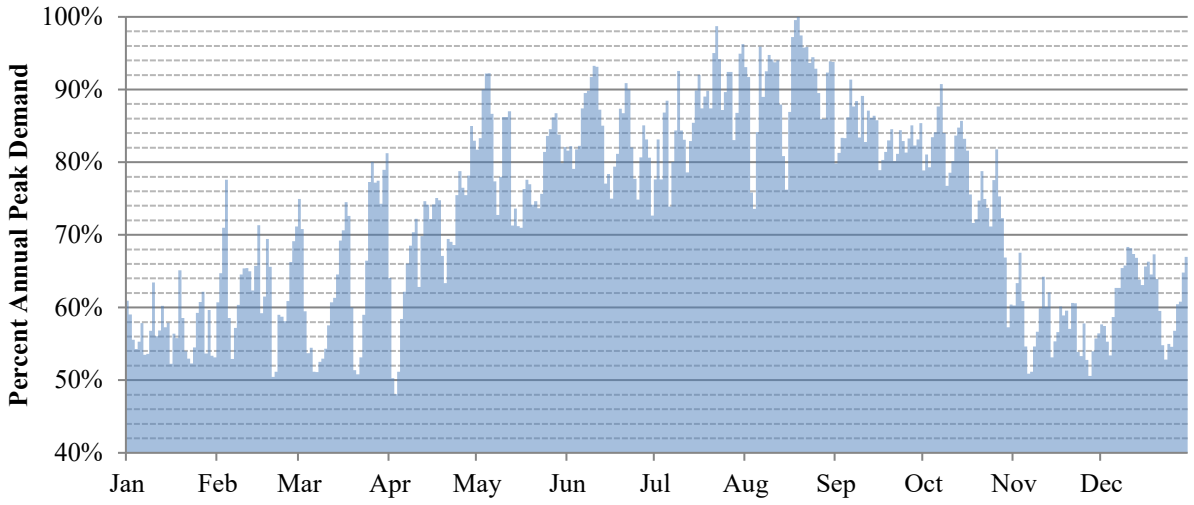


Source: TYSP Utilities' Data Responses

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 2021 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 annual peak levels for longer periods. 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 (2021 Actual)



Source: 2022 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 168,722 EVs will be operating in Florida by the end of 2022. The Florida Department of Highway Safety and Motor Vehicles lists the number of registered automobiles, heavy trucks, and buses in Florida, as of January 9, 2022 at 18.07 million

vehicles, resulting in an approximate 0.93 percent penetration rate of electric vehicles. Each of the TYSP Utilities was sent a data request regarding estimates of electric vehicle ownership, public charging stations, and impacts to their electric grid. All responded and provided projections except for FMPA, LAK, OUC, and SEC. LAK was able to provide estimates for the number of vehicles and chargers in 2022, but did not have projections for the planning period and estimated EV impacts were insignificant to its grid. OUC did not provide a forecast, with OUC citing uncertainty in the EV market. FMPA and SEC do not have service territories, but they do provide power to their member municipal utilities and rural electric cooperatives.

Florida's electric utilities anticipate continued growth in the electric vehicle market, as illustrated in Table 2. Electric vehicle ownership is anticipated to grow rapidly throughout the planning period, resulting in approximately 1,546,210 electric vehicles operating within the service territories of the TYSP Utilities by the end of 2031.

Table 2: TYSP Utilities - Estimated Number of Electric Vehicles

Year	FPL	DEF	TECO	JEA	GRU	LAK	TAL	Total
2022	116,202	33,325	12,218	4,220	1,065	534	1,158	168,722
2023	162,141	42,404	14,890	5,477	1,331	N/A	1,469	227,712
2024	220,697	52,918	17,742	6,939	1,664	N/A	1,832	301,792
2025	293,809	65,134	20,785	8,589	2,080	N/A	2,253	392,650
2026	391,240	79,267	24,119	10,419	2,600	N/A	2,736	510,381
2027	512,104	95,455	27,808	12,441	3,250	N/A	3,288	654,346
2028	657,776	114,021	31,977	14,689	4,063	N/A	3,921	826,447
2029	831,693	135,439	36,561	17,187	5,078	N/A	4,640	1,030,598
2030	1,037,328	160,059	41,599	19,951	6,348	N/A	5,459	1,270,744
2031	1,273,609	188,139	47,156	22,993	7,935	N/A	6,378	1,546,210

Source: TYSP Utilities' Data Responses

The major drivers of electric vehicle growth include a combination of the following: increased availability of charging infrastructure, lower fuel costs and emissions, increased commitment from auto manufacturers, broadened public outreach, expanded vehicle availability (makes and models), and strong government policy support at the local, state, and federal levels. Resulting from such policy support is the EV Infrastructure Master Plan, published in July 2021, in which the Florida Legislature required the Commission and the State Energy Office to assist the Florida Department of Transportation in developing and recommending a master plan for the development of electric vehicle charging station infrastructure along the Florida State Highway System.[6] Government agencies, private entities, municipalities, and electric utilities continue to work together to expand charging infrastructure throughout the state to meet this expected growth in electric vehicles as well as to promote electric vehicle ownership.

Table 3 illustrates the reporting electric utilities' projections of public EV charging stations through 2031. While approximately 6,000 charging stations are estimated to be available across the state by the end of 2022, more than 32,000 charging stations are anticipated by 2031. The

[6] Florida Department of Transportation, *EV Infrastructure Master Plan,* published July 2021.

estimated public EV charging station counts listed in Table 3 include both normal and "quick-charge" public charging stations.[7]

Table 3: TYSP Utilities - Estimated Number of Public EV Charging Stations

Year	FPL	DEF	TECO	JEA	GRU	LAK	TAL	Total
2022	4,646	573	461	110	85	19	88	5,982
2023	6,292	926	512	124	94	N/A	90	8,038
2024	5,535	1,438	562	139	103	N/A	92	7,869
2025	10,431	2,128	613	155	113	N/A	94	13,534
2026	10,802	3,035	664	172	124	N/A	96	14,893
2027	12,678	4,170	714	190	137	N/A	98	17,987
2028	14,681	5,459	765	209	151	N/A	100	21,365
2029	17,063	6,867	815	229	166	N/A	103	25,243
2030	18,700	8,382	866	251	182	N/A	106	28,487
2031	20,908	10,018	917	274	200	N/A	109	32,426

Source: TYSP Utilities' Data Responses

Table 4 illustrates the TYSP Utilities' projections of energy consumed by electric vehicles through 2031. Across the TYSP Utilities, anticipated growth would result in an annual energy consumption of 5,977.1 GWh by 2031, which represents an impact of approximately 2.2 percent of the projected net energy for load.

Table 4: TYSP Utilities - Estimated Electric Vehicle Annual Energy Consumption (GWh)

Year	FPL	DEF	TECO	JEA	GRU	TAL	Total
2022	231.0	24.0	34.6	17.2	3.8	3.5	314.2
2023	401.0	54.1	45.5	24.1	4.8	4.5	534.0
2024	623.0	91.9	57.3	32.1	6.0	5.6	816.0
2025	908.0	138.9	70.3	41.2	7.5	6.9	1,172.7
2026	1,289.0	199.0	84.6	51.2	9.4	8.4	1,641.6
2027	1,771.0	274.5	100.8	62.3	11.7	10.1	2,230.5
2028	2,361.0	366.8	118.3	74.7	14.6	12.1	2,947.6
2029	3,075.0	470.4	137.9	88.5	18.3	14.4	3,804.4
2030	3,930.0	586.2	159.5	103.7	22.9	17.0	4,819.2
2031	4,913.0	712.2	183.0	120.5	28.6	19.9	5,977.1

Source: TYSP Utilities' Data Responses

Table 5 illustrates the TYSP Utilities' estimates of the effects of electric vehicle ownership on summer and winter peak demand through 2031. Across the TYSP Utilities, anticipated growth results in an impact to summer peak demand of approximately 1,395 MW and an impact to winter peak demand of approximately 610 MW by 2031. Current estimates represent a cumulative impact

[7] "Quick-charge" public EV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

of approximately 2.6 percent on summer peak demand and a 1.2 percent on winter peak demand by 2031.

Table 5: TYSP Utilities – Estimated Electric Vehicle Impact – Seasonal Peak Demand

Summer Peak Demand (MW)

Year	FPL	DEF	TECO	JEA	GRU	TAL	Total
2022	34	1.45	26.6	2.67	2.7	0.75	68
2023	76	3.6	31.7	3.73	3.3	0.95	119
2024	131	6.6	37.1	4.97	4.2	1.19	185
2025	202	10.5	42.8	6.37	5.2	1.46	268
2026	297	15.3	48.9	7.93	6.5	1.77	377
2027	418	21.2	55.6	9.65	8.1	2.13	515
2028	565	28.1	63.0	11.57	10.2	2.54	680
2029	744	71.0	71.0	18.33	12.7	3.00	920
2030	958	44.6	79.7	21.48	15.9	3.53	1,123
2031	1203	54.0	89.2	24.96	19.8	4.13	1,395

Winter Peak Demand (MW)

Year	FPL	DEF	TECO	JEA	GRU	TAL	Total
2022	15	0.5	11.5	0.24	4.0	0.44	32
2023	33	1.3	13.9	0.34	5.0	0.55	54
2024	57	1.9	16.4	0.45	6.2	0.69	83
2025	87	2.7	19.0	0.57	7.8	0.85	118
2026	129	3.8	21.9	0.71	9.8	1.03	166
2027	181	5.3	25.0	0.87	12.2	1.24	226
2028	244	7.2	28.5	1.04	15.2	1.48	297
2029	322	9.5	32.4	1.23	19.0	1.75	386
2030	414	12.1	36.5	1.45	23.8	2.05	490
2031	520	14.8	41.0	1.68	29.8	2.40	610

Source: TYSP Utilities' Data Responses

Some utilities, such as FPL and DEF, have begun to report key findings and metrics obtained through their respective EV pilot programs. This information includes: individual charging session data, peak EV charging hours, impacts to peak demand, as well as other metrics such as revenue generated and port installation costs. Other utilities' EV pilot programs have not yet reached an age of maturity that will yield these same key findings. The Commission will continue to ask utilities to note key findings and track metrics of interest within these pilot programs in an effort to help inform the Commission about the future power needs of electric vehicles in Florida, which may require additional generating resources to meet their needs.

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 in the summer, 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 programs 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)

In 1980, the Florida Legislature established FEECA, which consists of Sections 366.80 through 366.83 and Section 403.519, F.S. Under FEECA, the Commission is required to set appropriate goals for increasing the efficiency of energy consumption and increasing the development of demand-side renewable energy systems for electric utilities of a certain size, known as the FEECA Utilities.[8] Of the TYSP Utilities, these include the three investor-owned electric utilities, FPL, DEF, TECO, and two municipal electric utilities, JEA and OUC. The FEECA Utilities represented approximately 86 percent of 2021 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. Each FEECA electric utility was required to submit a proposed DSM Plan, designed to meet the goals within 90 days of the final order establishing the goals. In 2020, the Commission approved the DSM Plans proposed by the FEECA electric utilities. All FEECA Utilities that filed a 2022 Ten-Year Site Plan incorporated in their planning the impacts of the established DSM goals through 2024.

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

[8] FEECA also applies to Florida Public Utilities Company, a non-generating investor-owned electric utility. As FPUC purchases power from other generating entities and does not own or operate its own generation resources, it is not required to file a Ten-Year Site Plan. Based on its 2022 Annual Report, FPUC accounted for 0.3 percent of the State's retail energy sales in 2021.

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 2022, the total amount of demand response resources available for reduction of peak load is 3,097 MW for summer peak and 2,927 MW for winter peak. Demand response is anticipated to increase to approximately 3,401 MW for summer peak and 3,282 MW for winter peak by 2031.

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, 2021, energy efficiency is responsible for peak load reductions of 4,669 MW for summer peak and 4,920 MW for winter peak. Energy efficiency is anticipated to increase to approximately 5,378 MW for summer peak and 5,296 MW for winter peak by 2031.

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.

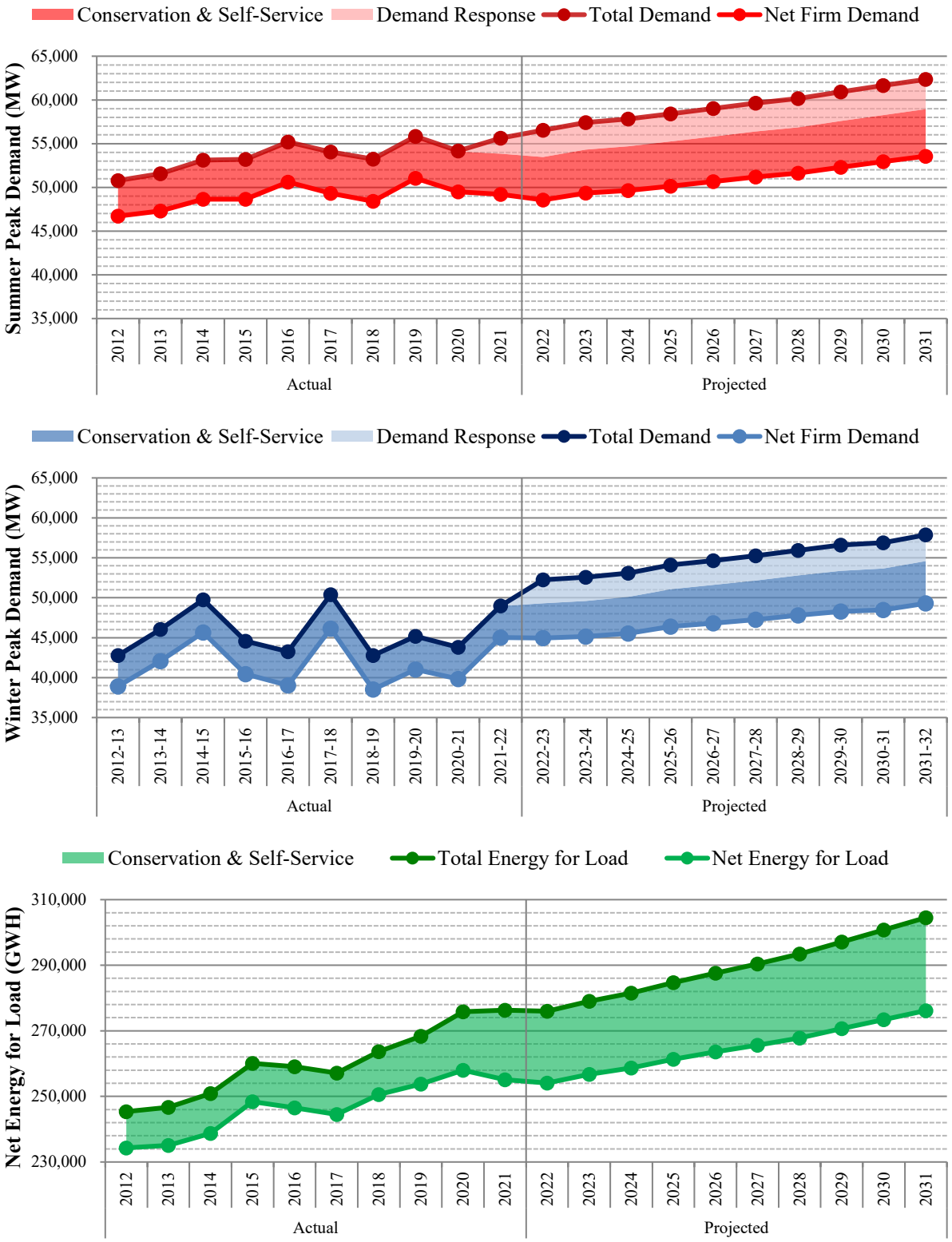
Demand-side management, including demand response and energy efficiency, along with self-service generation, is included in each graph appearing in Figure 10 for seasonal peak demand and

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 2022 Regional Load and Resource Plan

Forecast Methodology

Load forecasting is an essential requirement of all electric utility companies for purposes of system planning. In order for utilities to reliably and cost-effectively serve their respective customers, they must be able to accurately determine their energy and demand requirements. Thus, the load forecast function facilitates the ongoing equilibrium between system demand and system supply. Load forecasting can be divided into three types depending on the forecasting horizon: short, medium and long-term. Short-term load forecasting denotes forecast horizons of up to one week ahead. Medium-term load forecasting ranges from one week to one year ahead. Long-term load forecasting typically targets forecast horizons of one to ten years, and sometimes up to several decades. Long-term load forecasting provides the essential load requirement data that a utility must have in order to effectively modify its system of generation, transmission, and distribution assets. Load forecasts directly impact the timing, type, and location of expansions, replacements, and retirements. Hence, the load forecast function plays a vital role in an electric utility's system planning and, in Florida, serves as the foundation of a utility's Ten-Year Site Plan.

Florida's electric utilities perform long-term 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., winter peak demand per customer, residential energy use per customer) and independent variables (e.g., daily minimum temperature, heating 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 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.

Historically, 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 projecting load. The models have relied upon dependent and independent variable data to project energy and demand amounts that exist within a probabilistic range. 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. Again in 2022, Florida's electric utilities used these same types of models and techniques to prepare their forecasts.

Accuracy of Retail Energy Sales Forecast

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 2021 retail energy sales were compared to the forecasts made in 2016, 2017, and 2018. 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 2022 TYSPs, determining the accuracy of the five-year rolling average forecasts involves comparing the actual retail energy sales for the period 2017 through 2021 to forecasts made between 2012 and 2018. These are summarized in Table 6.

Table 6: 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
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%
2021	2021 - 2017	2018 - 2012	1.10%	1.67%

Source: 2004-2022 Ten-Year Site Plans

To verify whether more recent forecasts lowered the error rates, an additional analysis was conducted to determine with more detail, the source of high error rates in terms of forecast timing. Table 7 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 a three to five-year period that was also used in the analysis in Table 6.

As displayed in Table 7, the utilities' retail energy sales forecasts show large positive error rates during the recession-impacted period 2010 through 2014. Starting in 2015, the error rates have declined considerably; and, the error rates calculated based on recent years' TYSPs continue to show lower forecast error rates, compared to the peak value of the error rates related to 2010-2014 sales forecasts. The last two years' four-year ahead forecasts and the last three years' three-year ahead forecasts all bear negative error rates (under-forecasts). Additionally, most of the last three years' two-year ahead forecasts and one-year ahead forecasts render negative error rates as well. The positive error rate exceptions are the 2020 one-year ahead forecasts and 2021 two-year ahead forecasts which reflect the unforeseen impacts of the COVID-19 Pandemic-related shelter-in-place orders in 2020. The current TYSP also shows a very small error rate with respect to both average and absolute average three to five year error percentages. Likewise, the one-year ahead forecast error associated with the 2022 TYSPs appears to be one of the lowest since 2010.

Table 7: 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		
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%
2021	2.47%	0.24%	-0.09%	-0.91%	3.80%	-0.08%	-0.26%	0.41%

Source: 2004-2022 Ten-Year Site Plans

Barring any unforeseen economic crises or atypical weather patterns, 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 2021 in Table 6. However, current major global and domestic events could, individually or collectively, inflict damage to the US economy. As such, there remains uncertainty as to when the economic impacts of these events will end. As a result, the actual retail energy sales of the next few years could be different from what Florida utilities projected in 2021 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, political and economic issues 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., the Legislature has found that it is in the public interest to promote the development of renewable energy resources in Florida. Section 366.91(2)(e), 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 or resulting 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)(e), 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 7,584 MW of firm and non-firm generation capacity, which represents 9.2 percent of Florida's overall generation capacity of 63,895 MW in 2021. Table 8 summarizes the contribution by renewable type of Florida's existing renewable energy sources.

Table 8: State of Florida - Existing Renewable Resources

Renewable Type	MW	% Total
Solar	6,085	80.2%
Municipal Solid Waste	451	5.9%
Biomass	380	5.0%
Waste Heat	276	3.6%
Wind	272	3.6%
Landfill Gas	70	0.9%
Hydroelectric	51	0.7%
Renewable Total	**7,584**	100.0%

Source: FRCC 2022 Regional Load and Resource Plan & TYSP Utilities' Data Responses

Of the total 7,584 MW of renewable generation, approximately 2,790 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 2,458 MW to this total, based upon the

coincidence of solar generation and summer peak demand, or about 40 percent of its installed capacity. Changes in timing of peak demand may influence the firm contributions of renewable resources such as solar and wind.

Of the 1,499 MW of non-solar generation, only 332 MW is treated as firm because of contractual commitments. 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.

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 4,490 MW of existing utility-owned solar capacity, approximately 2,347 MW, or about 52 percent, is considered firm.

Non-Utility Renewable Generation

Approximately 2938 MW, or 39 percent of Florida's existing renewable capacity is from non-utility owned sources. A majority, approximately 1,761 MW, or 23 percent, comes from mostly municipal solid waste and solar facilities. 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.

Demand-Side Renewable Generation

Approximately 1,177 MW, or 16 percent of existing non-utility owned renewable generation is from customer-owned systems, also referred to as demand-side renewable systems. 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 2021, approximately 1,177 MW of renewable capacity from over 130,947 systems has been installed statewide. Table 9 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 9: State of Florida - Customer-Owned Renewable Growth

Year	2014	2015	2016	2017	2018	2019	2020	2021
Number of Installations	8,581	11,626	15,994	24,166	37,862	59,508	90,552	103,947
Installed Capacity (MW)	79.8	107.5	141	205	317	514	835	1,177

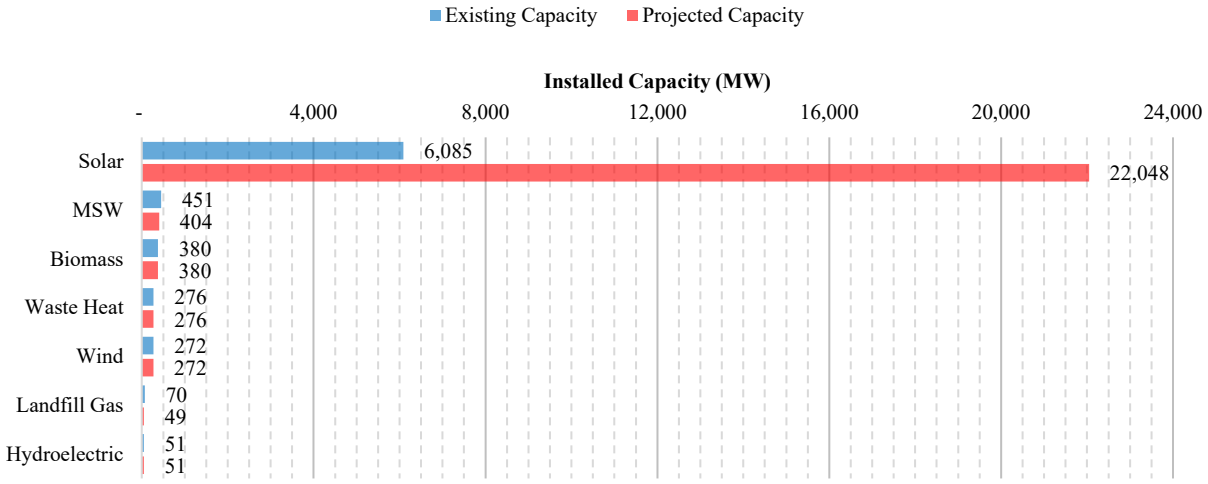
Source: 2015-2022 Net Metering Reports

Planned Renewable Resources

Florida's total renewable resources are expected to increase by an estimated 15,894 MW over the 10-year planning period, an increase from last year's estimated 15,055 MW projection. Figure 11 summarizes the existing and projected renewable capacity by generation type. Solar generation, primarily utility-owned, is projected to have the greatest increase over the planning horizon.

Of the 15,894 MW projected net increase in renewable capacity, firm resources contribute 5,279 MW, or about 33 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.

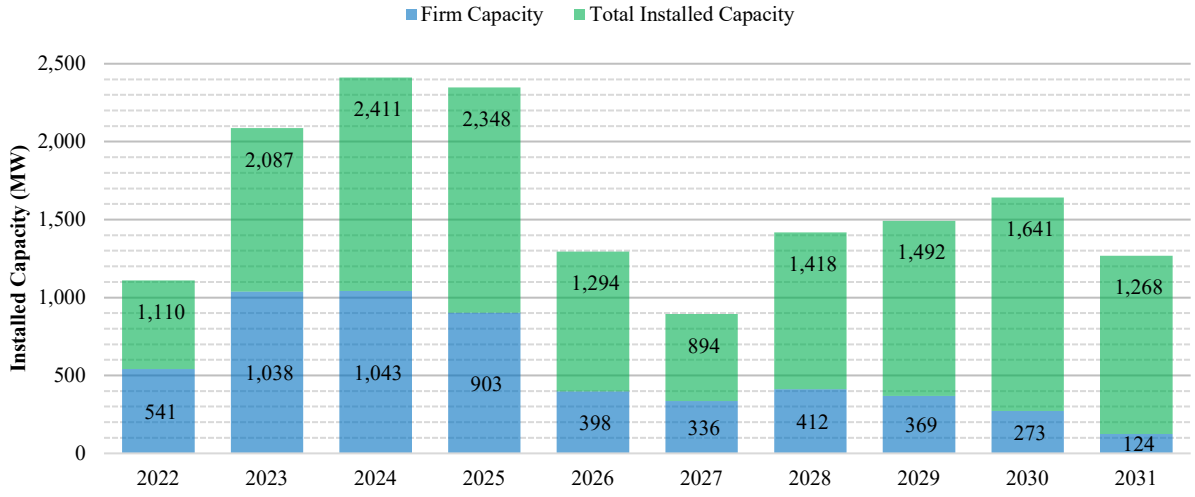
Figure 11: State of Florida - Current and Projected Renewable Resources



Source: FRCC 2022 Regional Load and Resource Plan & TYSP Utilities' Data Responses

As noted above, solar generation is anticipated to increase significantly over the 10-year period, with a net total of 15,963 MW to be installed. This consists of 13,650 MW of utility-owned solar and 2,313 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 2022 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 deployed approximately 50 MW of non-firm capacity through its Battery Storage Pilot Program, which examines the applications of combining battery storage with new and existing solar facilities.[9] In 2021, FPL added 409 MW of battery storage in Manatee County, which is charged by an existing PV facility. Additionally, two other 30 MW battery storage facilities were installed at two different locations and put into service in 2021. FPL's 2022 TYSP includes an additional 1,800 MW of unsited solar charged battery storage additions over the next 10 years.

DEF is expanding its battery storage with a 50 MW, non-firm capacity, Battery Storage Pilot Program as part of its 2017 Settlement.[10] The program includes six solar charged battery energy storage systems. Trenton and Lake Placid battery energy storage systems were placed in-service in late 2021 with the remaining four battery energy storage systems under construction and expected to be placed in-service in 2022. 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. DEF is planning an additional 111 MW of solar connected battery storage by the end of 2031.

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. In 2021 TECO completed its first integrated renewable energy system, consisting of solar PV carports that charge commercial-sized batteries which re-charge the Company's EV fleet. Over the next 10 years, TECO expects to deploy approximately 265 MW of energy storage systems to meet system reliability needs, maximize solar energy production, and to avoid transmission and distribution investments.

In addition to utility-owned battery storage, energy storage associated with purchased power agreements are also anticipated in the planning horizon. OUC also plans to enter into purchased power agreements with energy storage providers connected to future solar facilities, with an estimated 350 MW of capacity through 2031. Overall, whether utility-owned or contracted, a total of 2,819 MW of battery storage is projected to be installed by 2031.

[9] 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.*

[10] 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

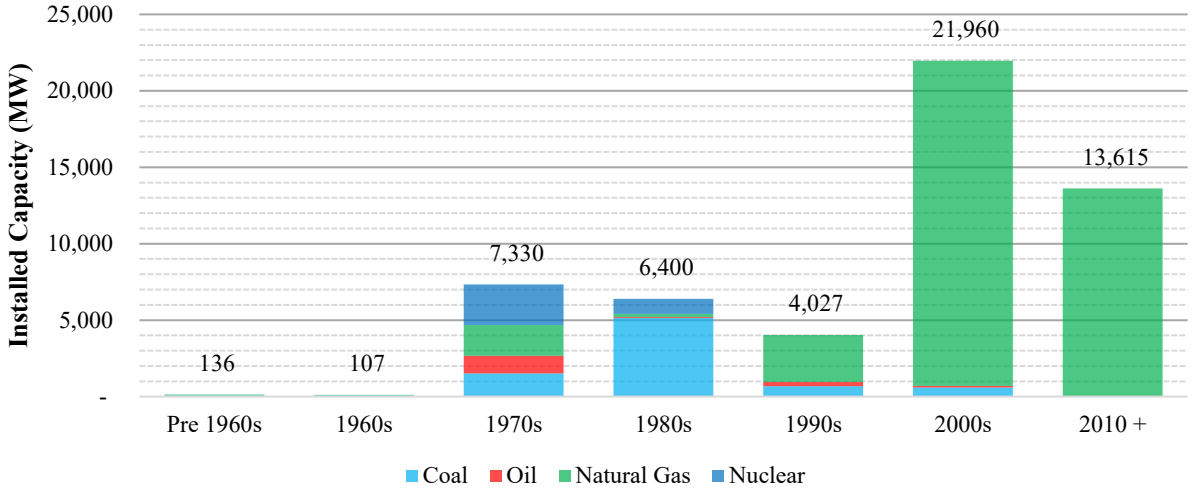
While renewable generation increases its contribution to the state's generating capacity, a majority of generation is projected to come from traditional sources, such as fossil-fueled steam and combustion turbine generators that have been added to Florida's electric grid over the last several decades. 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 22 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.

Figure 13: State of Florida - Electric Utility Installed Capacity by Decade



Source: FRCC 2022 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. [11] 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.

[11] See Executive Order 13990 Fact Sheet.

- 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 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 - 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 - 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 the end of 2022. 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 10 lists the 4,003 MW of existing generation that is scheduled to be retired during the planning period. A majority of the retirements are coal-fired steam generators, with 10 units totaling 3,400 MW of capacity to be retired by 2031. Additional capacity reductions in coal occur due to fuel switching, such as the approximately 464 MW Stanton Unit 2, jointly owned by FMPA and OUC, which will be converted to natural gas in 2027.

Table 10: State of Florida - Electric Generating Units to be Retired

Year	Utility Name	Plant Name & Unit Number	Net Capacity (MW) Summer
Coal Steam Retirements			
2022	FPL & JEA	Scherer Unit 4	832
2022	SEC	Seminole Generating Station Unit 1	626
2023	TEC	Big Bend Unit 3	395
2024	FPL	Daniel Units 1 & 2	502
2025	FPL	Gulf CEC Units 4 & 5	150
2025	FMPA & OUC	Stanton Unit 1	452
2029	FPL	Scherer Unit 3	215
2031	GRU	Deerhaven Unit FS02	228
		Coal Subtotal	**3,400**
Oil Combustion Turbine Retirements			
2025	FPL	Lansing Smith Unit A	32
2025	DEF	Bayboro Units P1-P4	171
2027	DEF	Debary Units P2-P6	227
2027	DEF	P.L. Bartow Units P1 & P3	82
		Oil Subtotal	**512**
Natural Gas Combustion Turbine Retirements			
2025	FPL	Pea Ridge Units 1-3	12
2026	GRU	Deerhaven Units GT01-02	35
2027	DEF	University of Florida Unit P1	44
		Gas Subtotal	**91**
		Total Retirements	**4,003**

Source: 2022 Ten-Year Site Plans

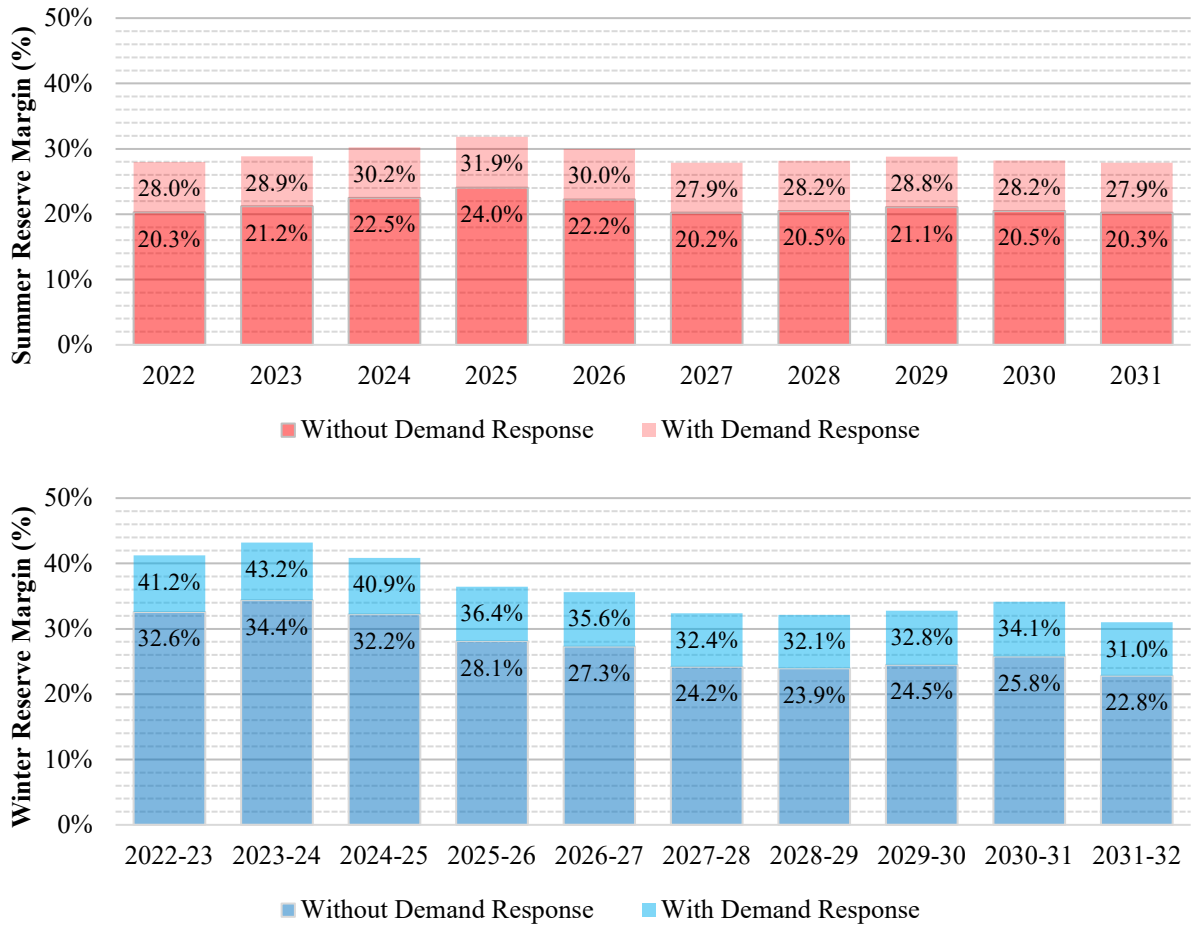
Reliability Requirements

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 (formerly the Southeastern Electric Reliability Council) 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 2022 Regional Load and Resource Plan - Revised Form 10

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 on average 7.7 percent in summer and 8.4 percent in winter.

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.

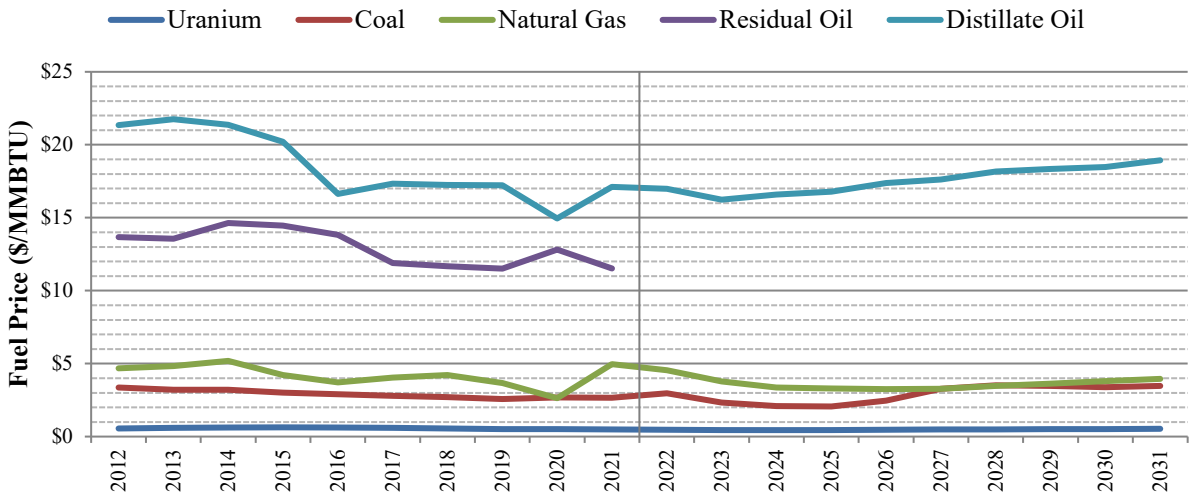
Fuel Price Forecast

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 also factors into Florida utilities' fuel mix, albeit minimally when compared to historical levels. Figure 15 illustrates the weighted average fuel price history and forecasts for the reporting electric utilities.

Natural gas remains the most intensively used fuel state-wide on a per GWh basis, accounting for 69.15 percent of electric generation in 2021.[12] As shown in Figure 15, the price of natural gas continued to decline from 2012 until 2020. However, there was an 89 percent increase, from a unit price in dollars per million British Thermal Units (BTUs) of $2.63 in 2020 to $4.97 in 2021. The price of natural gas is now forecast to decline from 2021 through 2026. Meanwhile, the price of coal has been stable from 2012 through 2021. However, forecasts show a slight decrease through 2025 at which time it is forecast to increase by roughly 68 percent from 2025 through 2031. It should be noted that the use of coal is projected to decrease substantially over the next 10 years.

Distillate oil remains the most expensive fuel, which explains why it is used for backup and peaking purposes only. Also of note is a phasing out of residual oil, with no forecast for purchasing residual oil after 2021. The truncated graph on Figure 15 reflects this phasing out of residual oil.

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



Source: TYSP Utilities' Data Responses

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.

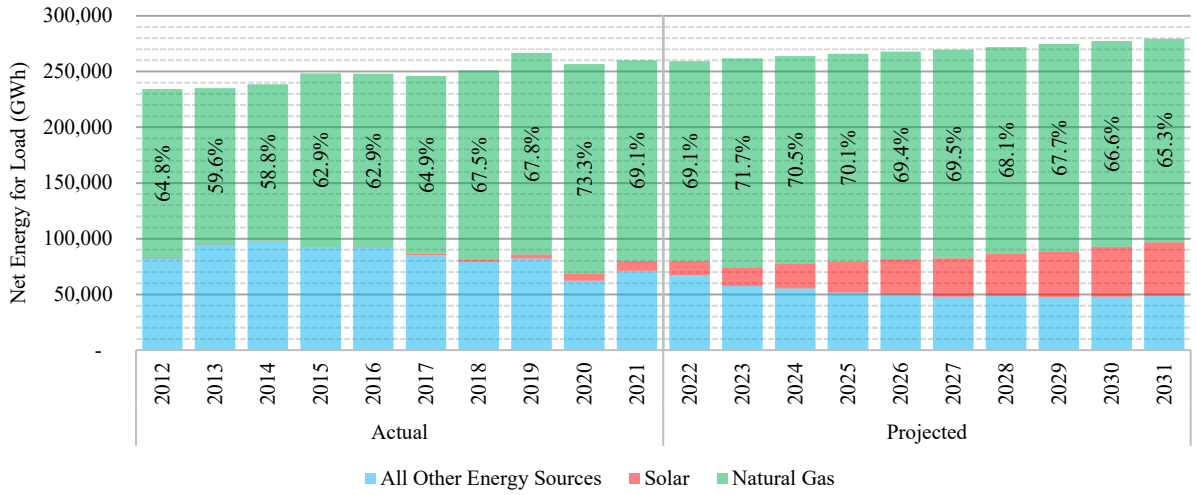
[12] 2022 Florida Reliability Coordinating Council 2022 Regional Load and Resource Plan, p. S-19.

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 Commission on August 30, 2021.[13]

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 69 percent of electric energy consumed in Florida in 2021. 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 2013-2022 Regional Load and Resource Plans

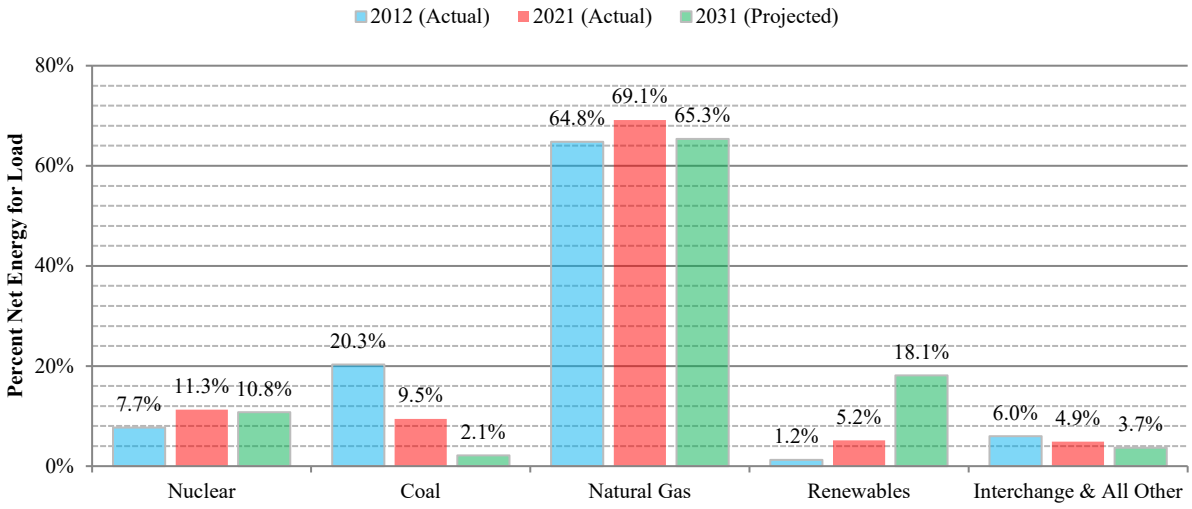
Because a balanced fuel supply can enhance system reliability and mitigate the effects of volatility in fuel price fluctuations, it is important that utilities have a level of flexibility in their generation mix. Maintaining fuel diversity on Florida's system faces several difficulties. Existing coal 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 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 2012 and 2021, and forecast year 2031. 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

[13] Docket No. 20210001-EI, *In re: Fuel and purchased power cost recovery clause with generating performance incentive factor.*

energy consumption, and this trend is anticipated to continue throughout the planning period. Renewables are expected to exceed all other generation sources except for natural gas by 2031.

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



Source: FRCC 2013-2022 Regional Load and Resource Plan

Based on 2020 Energy Information Administration data, Florida ranks fifth in terms of the total volume of natural gas consumed compared to the rest of the United States.[14] 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 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.

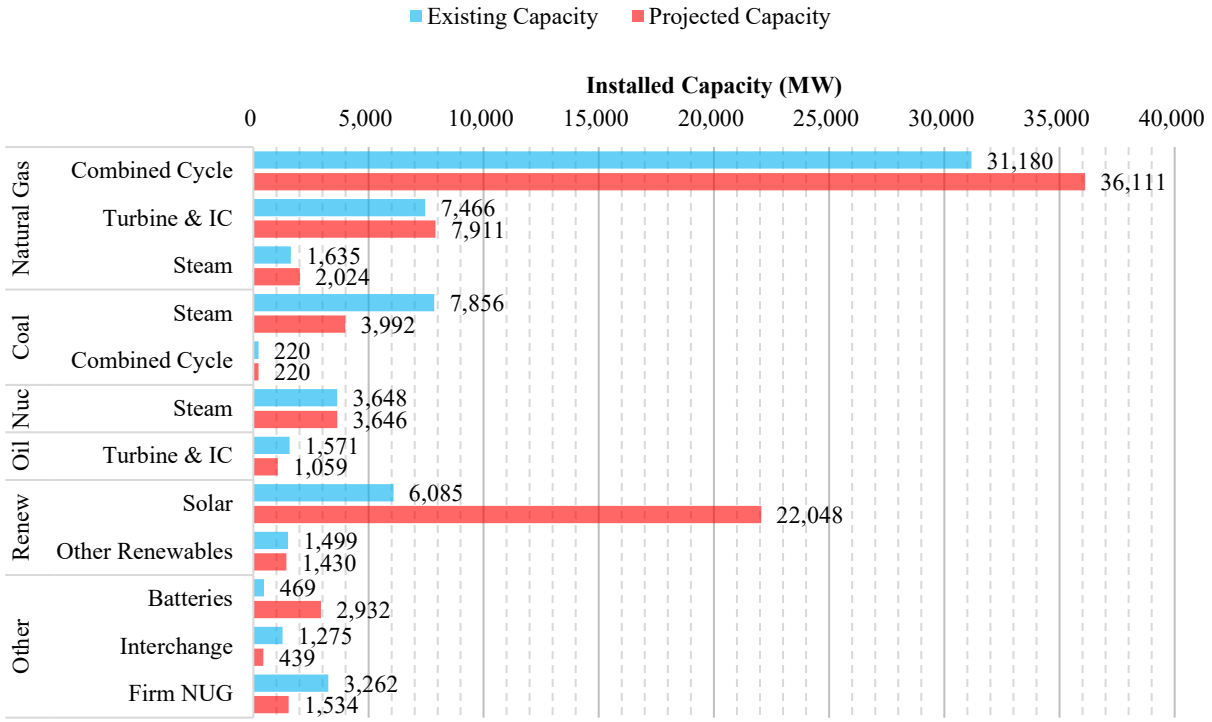
In addition to traditional economic analyses, utilities also consider several strategic factors, such as fuel availability, generation mix, and environmental compliance prior to selecting a new supply-side resource. Limited supplies, access to water or rail delivery points, pipeline capacity, water

[14] U.S. Energy Information Administration natural gas consumption by end-use annual report.

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, retirements, fuel switching, uprates and derates, and changes in operational or contract status contained in the reporting utilities' 2022 Ten-Year Site Plans and the FRCC's 2022 Regional Load and Resource Plan.

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



Source: FRCC 2022 Regional Load and Resource Plan & TYSP Utilities' Data Responses

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. Only one planned unit requires certification under the PPSA, a 571 MW natural gas-fired combined cycle with an in-service date in 2025 for SEC.

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 2018, FPL received Combined Operating Licenses from the Nuclear Regulatory Commission 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.

Natural Gas

Several new natural gas-fired combustion turbines, internal combustion units, and combined cycle units are planned over the next 10 years. While combined cycle systems are the dominant generating unit type, combustion turbines that run only in simple cycle mode and internal combustion units, taken together, will represent the third most abundant type of generating capacity by the end of 2031. 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 11 summarizes the approximately 4,048 MW of additional capacity from new natural gas-fired generating units proposed by the 2022 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 11: TYSP Utilities - Planned Natural Gas Units

In-Service Year	Utility Name	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Notes
Previously Approved New PPSA Units					
2022	FPL	Dania Beach Energy Center	CC	1,258	Docket No. 20170225-EI
2022	SEC	Seminole CC Facility	CC	1,099	Docket No. 20170266-EI
			Subtotal	**2,357**	
New Units Requiring PPSA Approval					
2025	SEC	Unnamed CC	CC	571	
			Subtotal	**571**	
New Units Not Requiring PPSA Approval					
2023	TECO	Big Bend CC Conversion	CC	395	Incremental Capacity
2024	LAK	C.D. McIntosh, Jr Units 01-06	IC	120	Six 20 MW Units
2025	TECO	Reciprocating Engine	IC	37	Pair of 18.5 MW Units
2027	SEC	Unnamed Combustion Turbine	CT	317	
2028	TECO	Reciprocating Engine	IC	37	Pair of 18.5 MW Units
2029	DEF	Unsited Combustion Turbine	CT	214	
			Subtotal	**1,120**	
			Total	**4,048**	

Source: 2022 Ten-Year Site Plans

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 12 lists all proposed transmission lines in the 2022 Ten-Year Site Plans and the FRCC 2022 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 12: State of Florida - Planned Transmission Lines

Utility	Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
FPL	Levee to Midway	150	500	5/28/1988	4/20/1990	2030
FPL	Sweatt to Whidden	79	230	6/03/2022	TBD	2025
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	28	230	9/26/2007	2/18/2009	TBD

Source: 2022 Ten-Year Site Plans & FRCC 2022 Regional Load and Resource Plan

Utility Perspectives

Florida Power & Light Company (FPL)

FPL is an investor-owned utility and Florida's largest electric utility. FPL's service territory previously was solely in the FRCC Region and consisted of South Florida and the east coast. In 2019, FPL's parent company, NextEra Energy Inc., acquired Gulf Power Company (GPC). GPC's service territory was in the Florida Panhandle region. While the companies merged at the beginning of 2022, it was not until mid-2022 that the companies transitioned into operating as a single entity with the completion of an interconnecting transmission line project, the North Florida Resiliency Connection. As a result, the 2022 Ten-Year Site Plan for FPL contains actual distinct data for the FPL and GPC regions through 2022, and combined data for projections through 2031.

In its 2022 Ten-Year Site Plan filing, FPL submitted four Ten-Year Site Plans for the Commission's consideration. These included a Business As Usual Plan, which used the Company's traditional resource planning methodology, its Recommended Plan, which introduced a novel extreme winter planning methodology, and two additional plans for informational purposes only that projected the potential impact of possible federal legislation as variations of the Business As Usual and Recommended Plans. In its original filing, FPL sought approval of its Recommended Plan. On July 11, 2022, FPL submitted a letter withdrawing its Recommended Plan and requesting approval of the Business As Usual Plan. Therefore, the analysis contained within this section and the Statewide Perspective address only the Business As Usual Plan.

As an investor-owned utility, FPL, is subject to the regulatory authority of the Commission over all aspects of utility operations, including rates, reliability, and safety. Pursuant to Section 186.801(2), F.S., the Commission finds FPL 2022 Ten-Year Site Plan suitable for planning purposes.

Load and Energy Forecasts

In 2021, FPL legacy service area had approximately 5,214,263 customers and annual retail energy sales of 112,177 GWh, or approximately 47.9 percent of Florida's annual retail energy sales. GPC legacy service area had approximately 477,672 customers and annual retail energy sales of 10,731 GWh, or approximately 4.6 percent of Florida's 2021 annual retail energy sales. In both service areas, the total number of customers grew by approximately 1.5 percent in 2021 which was driven primarily by growth in the number of residential customers.

FPL's weather-normalized retail energy sales increased by 1.4 percent in 2021, driven by growth of the number of customers in the residential and commercial classes. Residential energy sales increased due to growth in the number of customers, even though the increase was partially offset by per customer usage declines. Commercial energy sales increased due to both customer numbers and per customer usage growth.

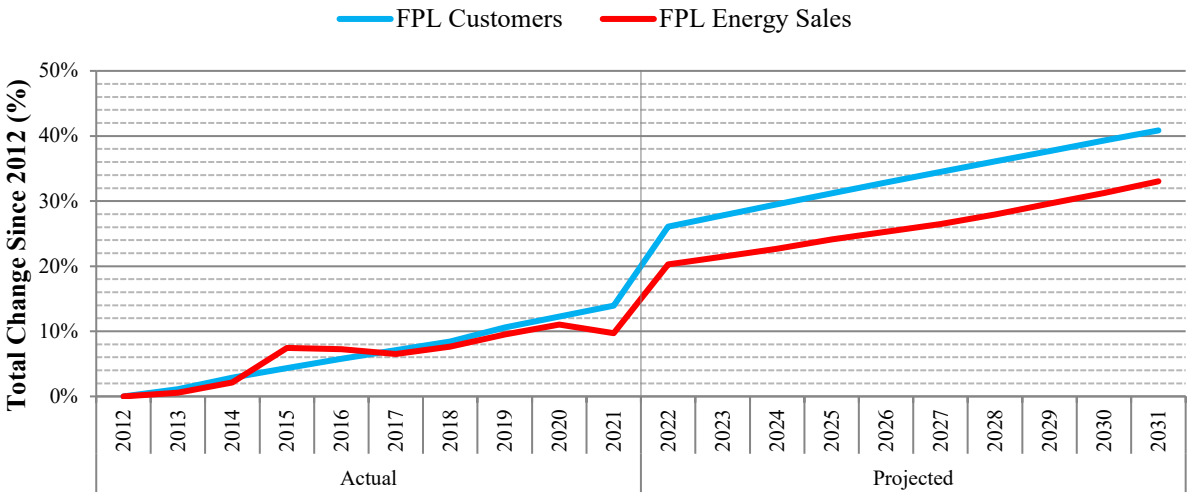
GPC's weather-normalized retail energy sales increased by 0.6 percent in 2021 due to higher commercial energy sales, partially offset by residential and industrial energy sales. Residential energy sales decreased due to usage declines, even though the increase was partially offset by growth in the number of customers. Industrial energy sales also decreased due to lower usage.

Over the past 10 years, FPL's customer base has increased by 13.9 percent, while retail sales have grown by approximately 9.7 percent. For the 2022 TYSP forecast horizon, the number of customers for the combined FPL and Gulf system are forecasted to grow by 1.1 to 1.4 percent per year. According to FPL, its total customer growth is being driven primarily by growth in residential customer numbers.

With respect to the average energy consumption per customer reflected in FPL's retail sales, residential use per customer for the combined system is forecasted to be flat or slightly decline through 2027 due to continued improvements in equipment efficiencies. For years 2028 and beyond, use per customer is forecasted to grow by 0.4 to 1.0 percent per year due to economic growth and increased adoption of electric vehicles. Commercial usage is forecasted to decline by 0.3 to 0.6 percent per year over the forecast horizon due to improvements to equipment efficiencies.

FPL's retail sales are forecasted to grow by 0.6 to 1.2 percent per year over the TYSP forecast horizon. This projected total retail sales growth is driven by sales growth in the residential class and commercial class, and these class-level energy sales increases are driven by growth in the number customers. Figure 19 illustrates historic and prospective forecasted growth rates in customers and retail energy sales for the two resource plans FPL filed in its 2022 TYSP.

Figure 19: FPL Growth
(Reflects post operational integration with GPC)



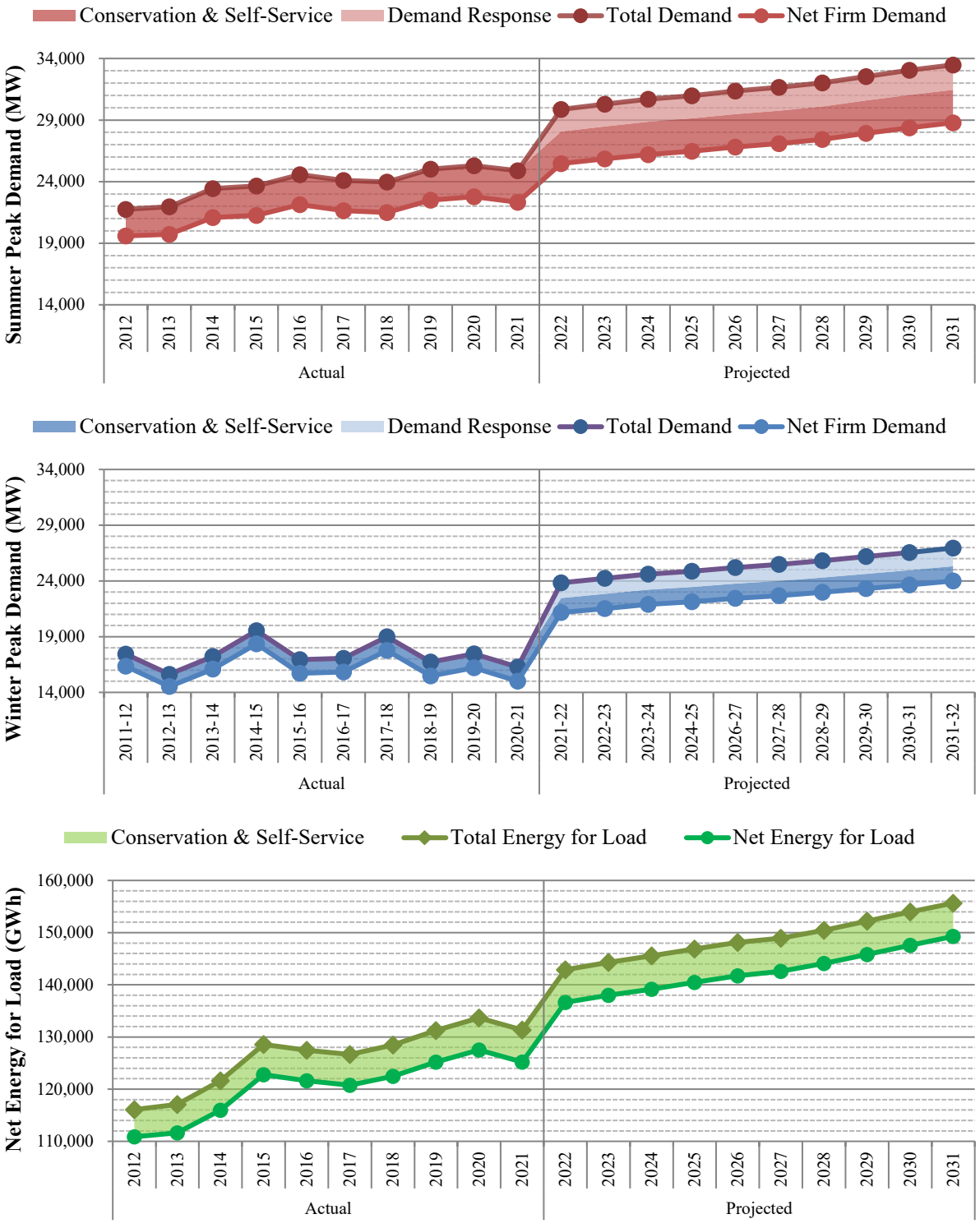
Source: 2022 Ten-Year Site Plan

As mentioned earlier, on January 1, 2019, GPC became a subsidiary of NextEra, FPL's parent company. FPL and GPC integrated the two systems into a single electric system, effective January 1, 2022. Despite the fact that the FPL and GPC systems were not be interconnected until mid-2022, the demand and energy forecasts for the years 2022 through 2031 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, summer and winter, and net energy for load, for the historic years 2012 through 2021, with the integrated FPL/GPC forecast for years 2022 through 2031. 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. During the past 10 years, demand response has not been activated during seasonal peak demand.

As an investor-owned utility, FPL is subject to FEECA and currently offers 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. In August 2020, the Commission approved separate FPL and GPC DSM plans designed to achieve the 2020-2024 DSM goals. In November 2021, the Commission approved an integrated FPL DSM plan designed to achieve FPL's and GPC's goals combined. In preparing its 2022 Ten-Year Site Plan seasonal peak demand and energy forecasts, FPL/GPC assume the trends in these goals will be extended through the forecast period (through 2031).

Figure 20: FPL Demand and Energy Forecasts
(Reflects post operational integration with GPC)



Source: 2022 Ten-Year Site Plan

Fuel Diversity

Table 13 shows FPL's and GPC's actual net energy for load by fuel type for 2021 and the projected fuel mix for the combined companies for 2031. FPL relies primarily upon natural gas and nuclear for energy generation, making up approximately 95 percent of net energy for load in 2021. GPC was an energy exporter in 2021, producing approximately 20 percent more energy than it required for native load. By 2031, the FPL system is projected to reduce natural gas usage from nearly 73 percent to approximately 61 percent. FPL projects that renewable energy will provide over 19 percent of its generation by 2031, which is the fifth highest percentage of renewable energy generation in 2031 of the TYSP Utilities.

Table 13: FPL and GPC Energy Generation by Fuel Type

Fuel Type	Net Energy for Load					
	FPL 2021		GPC 2021		FPL 2031	
	GWh	%	GWh	%	GWh	%
Natural Gas	90,903	**72.6%**	10,720	**92.5%**	90,484	**60.5%**
Coal	2,089	**1.7%**	1,765	**15.2%**	0	**0.0%**
Nuclear	28,342	**22.6%**	0	**0.0%**	28,919	**19.3%**
Oil	158	**0.1%**	0	**0.0%**	1	**0.0%**
Renewable	5,746	**4.6%**	1,441	**12.4%**	28,816	**19.3%**
Interchange	0	**0.0%**	-2,328	**-20.1%**	0	**0.0%**
Other	(2,071)	**-1.7%**	-8	**-0.1%**	1,279	**0.9%**
Total	**125,168**		**11,589**		**149,499**	

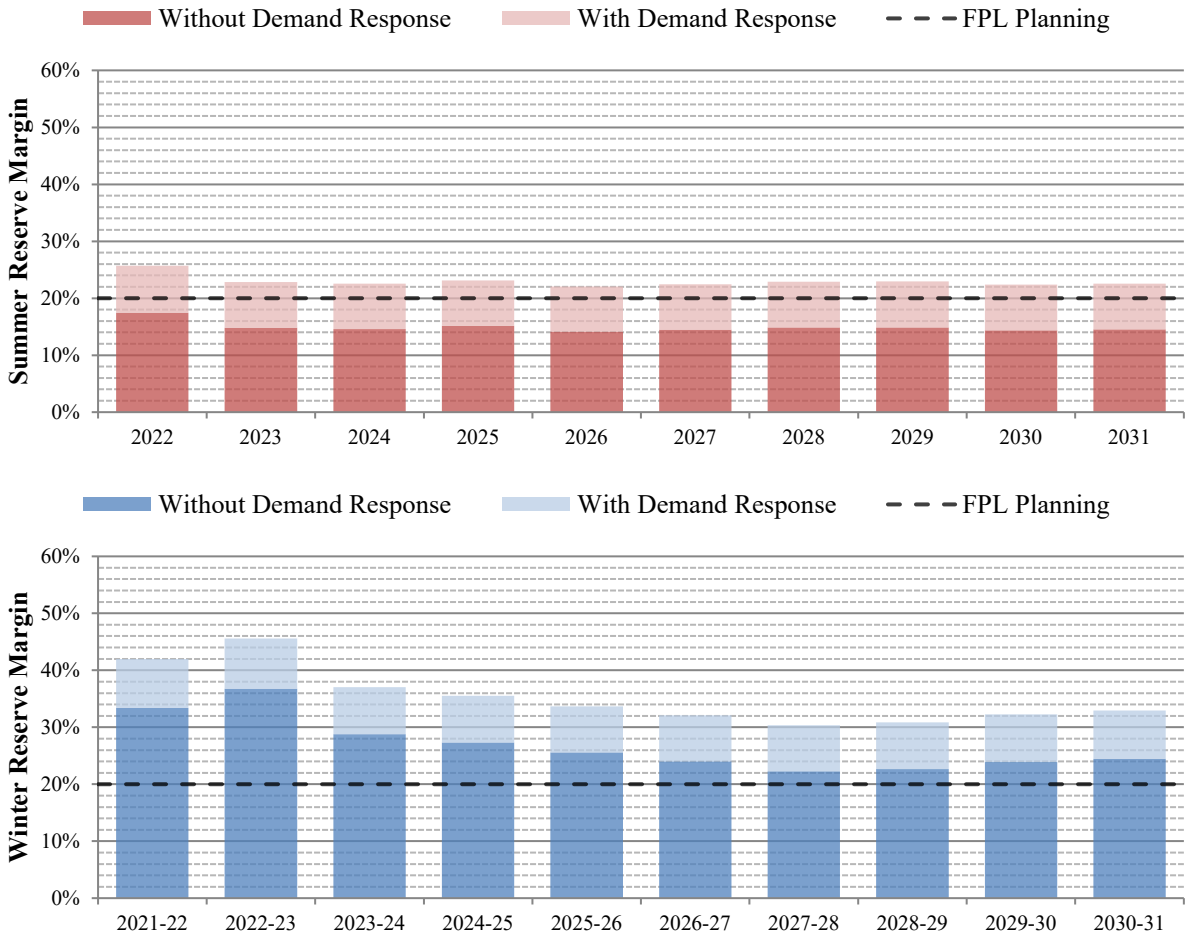
Source: 2022 Ten-Year Site Plan

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. Figure 21 displays the forecast planning reserve margin for 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 21: FPL Reserve Margin Forecast



Source: 2022 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.

Generation Resources

FPL plans multiple unit retirements and additions during the planning period. These changes are described in Table 14. Six units totaling 1,501 MW of coal generation are being retired, including FPL's partial ownership of Scherer Units 3 & 4 and Daniel Units 1 & 2.

FPL is only constructing one new natural gas-fired unit, the Dania Beach Clean Energy Center, a combined cycle unit, which is expected to go into service by mid-2022. In addition, FPL plans upgrades to several of its natural gas combustion turbines totaling 370 MW in additional capacity over the planning period. However, the majority of changes on FPL's system are from solar photovoltaic plants, adding approximately 9,314 MW at approximately 130 sites. Also, FPL anticipates adding a total of 1,800 MW of battery storage in the latter years of the planning period.

Table 14: FPL Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (MW)	Notes
			Sum	Sum	
Retiring Units					
2022	Scherer 4	BIT- ST	634		
2022	Lansing Smith	DFO - GT	32		
2024	Daniel 1 & 2	BIT- ST	502		
2025	Pea Ridge 1-3	NG - CT	12		
2025	Gulf Energy Center Units 4 &5	BIT - ST	150		
2029	Scherer	BIT- ST	215		
2029	Perdido	LFG - IC	3		
Total Retirements			**1,548**		
New Units					
2022	Dania Beach Clean Energy Center	NG - CC	1,258	N/A	Docket No. 20170225-EI
2022	Sited Solar Facilities	PV	447	155	6 Known Solar Sites
2023	Sited Solar Facilities	PV	1,118	528	16 Known Solar Sites
2024	Sited Solar Facilities	PV	1,416	617	19 Known Solar Sites
2024	Unknown Solar	PV	224	98	7 Solar Sites
2025	Unknown Solar	PV	1490	542	20 Solar Sites
2026	Unknown Solar	PV	596	178	8 Solar Sites
2027	Unknown Solar	PV	596	156	8 Solar Sites
2028	Unknown Solar	PV	745	195	10 Solar Sites
2029	Unknown Solar	PV	894	190	12 Solar Sites
2029	Unsited Battery Storage	BAT	500	N/A	Multiple Sites
2030	Unknown Solar	PV	894	58	12 Solar Sites
2030	Unsited Battery Storage	BAT	700	N/A	Multiple Sites
2031	Unknown Solar	PV	894	58	12 Solar Sites
2031	Unsited Battery Storage	BAT	600		Multiple Sites
Total New Units			**12,372**	**2,775**	
Net Additions			**10,824**		

Source: 2022 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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

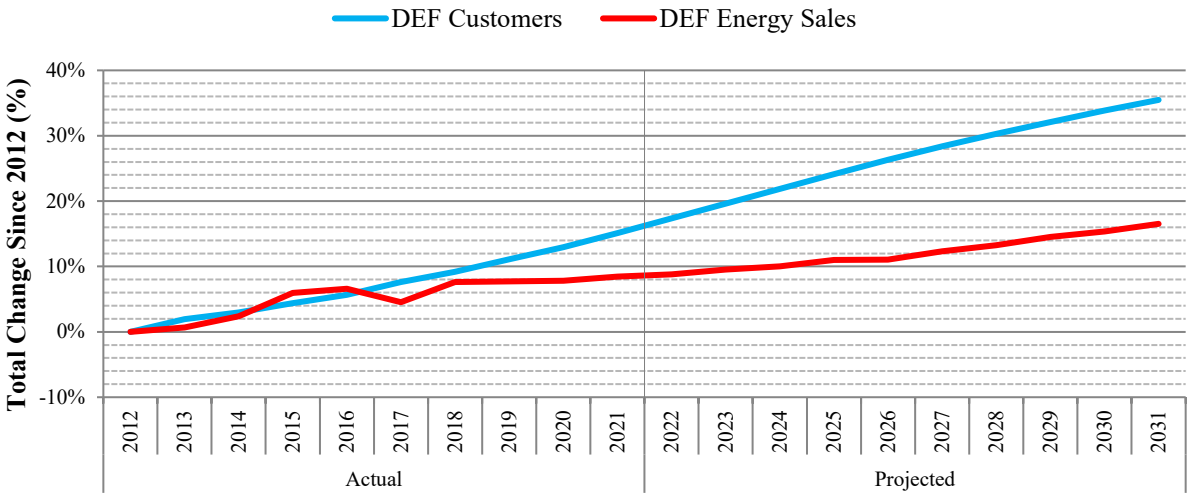
In 2021, DEF had approximately 1,898,726 customers and annual retail energy sales of 39,451 GWh or approximately 16.9 percent of Florida's annual retail energy sales. DEF's total customers grew approximately 1.87 percent in 2021. Figure 22 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012. Over the last 10 years, DEF's customer base has increased by 15.09 percent, while retail sales have grown by 8.44 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.

DEF's projected retail energy sales trend reflects the product of the utility's 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 meters. The utility also noted that the penetration of electric vehicles has grown, leading to an increase in residential use per customer, all else being equal.

For the 2022 TYSP forecast horizon, DEF's forecast results indicate that the utility's customer base is projected to grow at an average annual rate of 1.61 percent, and its retail energy sales are projected to grow at an average annual rate of 0.76 percent.

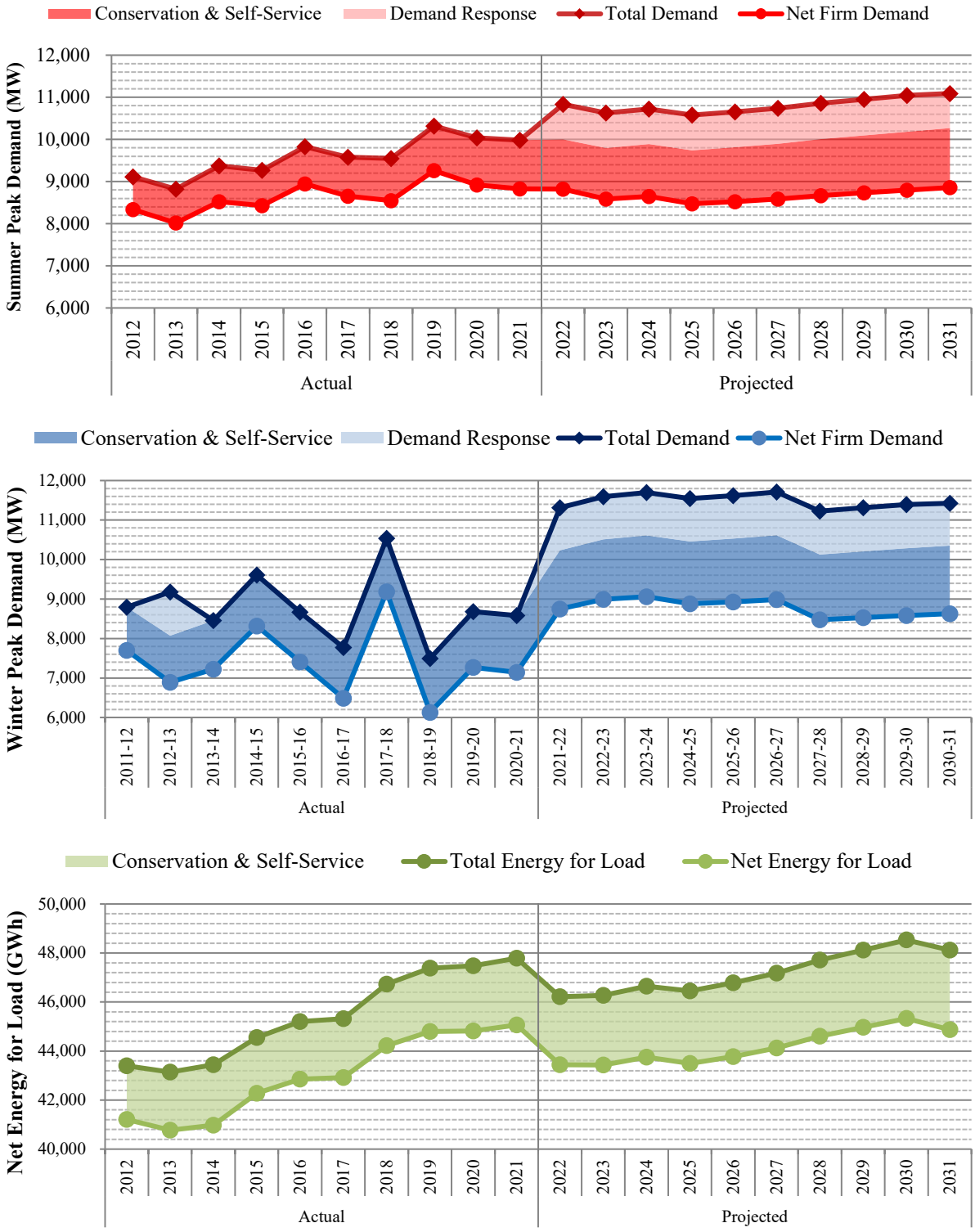
Figure 22: DEF Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 23 show DEF's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. 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. During the past 10 years, demand response has not been activated during seasonal peak demand. 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 DEF for the years 2020 through 2024. In August 2020, the Commission approved DEF's plan designed to achieve the 2020-2024 DSM goals. In preparing its 2022 Ten-Year Site Plan seasonal peak demand and energy forecasts, DEF assumes trends in these goals will be extended through the forecast horizon (through 2031).

Figure 23: DEF Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 15 shows DEF's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. DEF relies primarily upon natural gas and coal for energy generation, making up approximately 84 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 2031. DEF projects the third highest percentage of renewable energy generation in 2031 of the TYSP Utilities.

Table 15: DEF Energy Generation by Fuel Type

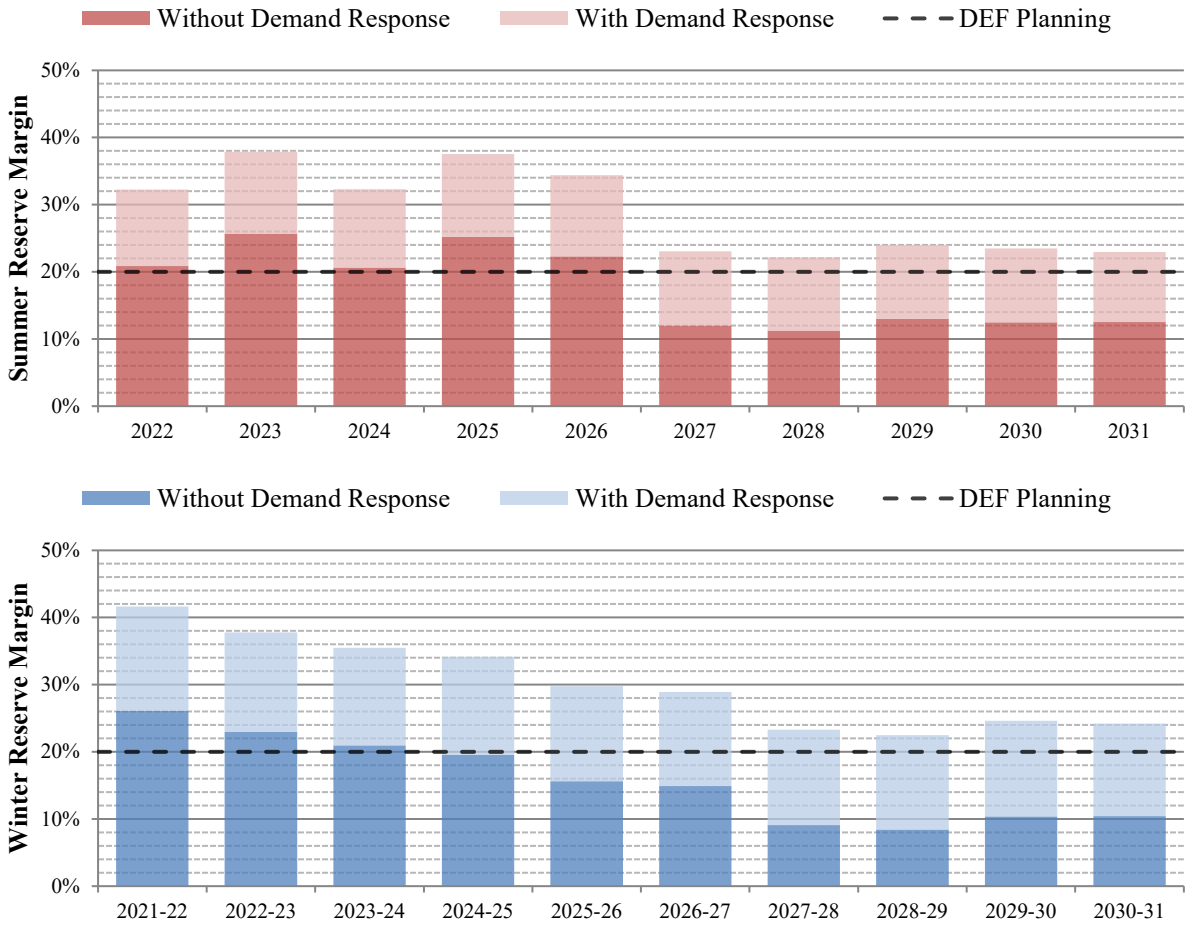
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	32,981	**73.2%**	33,318	**74.3%**
Coal	5,042	**11.2%**	1,548	**3.4%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	56	**0.1%**	4	**0.0%**
Renewable	1,551	**3.4%**	9,983	**22.2%**
Interchange	3,461	**7.7%**	17	**0.0%**
NUG & Other	1,974	**4.4%**	2	**0.0%**
Total	**45,065**		**44,872**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

Since 1999, DEF has utilized a 20 percent planning reserve margin criterion. Figure 24 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.

Figure 24: DEF Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

DEF projects multiple unit retirements and additions during the planning period, as described in Table 16. DEF plans on retiring one gas and several oil-fired units at multiple power plant sites totaling 524 MW. DEF is adding a combustion turbine in 2029, at an undesignated site. Transmission upgrades are expected to be completed in 2024 that will allow DEF to fully utilize its existing Osprey facility, with the incremental available firm capacity listed in Table 16.

DEF has included 2,700 MW of planned solar additions, which make up approximately 73 percent of DEF's planned total new capacity. DEF also plans on adding 111 MW of storage capacity to be connected to its solar facilities. 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.[15] The Order approving the CEC program was appealed to the Supreme Court of Florida. The Supreme Court remanded the decision back to the Commission, requesting a revised final

[15] 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.*

order to explain the Commissions finding and reasoning.[16] In addition to its utility-owned solar additions, DEF is also entering into several purchased power agreements with solar qualifying facilities for approximately 285 MW of capacity.

Table 16: DEF Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (Summer)	Notes
			Sum	Sum	
Retiring Units					
2025	Bayboro P1-4	DFO – CT	171	N/A	
2027	Debary P2-6	DFO – CT	227	N/A	
2027	Bartow P1 & 3	DFO – CT	82	N/A	
2027	University of Florida P1	NG – CT	44	N/A	
Total Retired MW			**524**	N/A	
New Units					
2022	Sited Solar Facilities	PV	300	172	4 Known Solar Sites
2023	Sited Solar Facilities	PV	300	172	4 Known Solar Sites
2024	Osprey	NG – CC	338	N/A	Transmission Upgrades
2024	Unknown Solar	PV	450	208	Multiple Sites
2025	Unknown Solar	PV	300	75	Multiple Sites
2026	Unknown Solar	PV	300	75	Multiple Sites
2027	Unknown Solar	PV	300	75	Multiple Sites
2028	Unknown Solar	PV	300	75	Multiple Sites
2029	Unknown Solar	PV	300	38	Multiple Sites
2029	Unknown CT	NG – CT	214	N/A	
2029	Unknown Solar Storage	BAT	37	N/A	Connected to Solar
2030	Unknown Solar	PV	300	38	Multiple Sites
2030	Unknown Solar Storage	BAT	37	N/A	Connected to Solar
2031	Unknown Solar Storage	BAT	37	N/A	Connected to Solar
2031	Unknown Solar	PV	300	38	Multiple Sites
Total New MW			**3,715**	**1,180**	
Net Additions			**3,172**		

Source: 2022 Ten-Year Site Plan

[16] Order No. PSC-2021-0059A-S-EI, issued September 23, 2022, in 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.*

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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

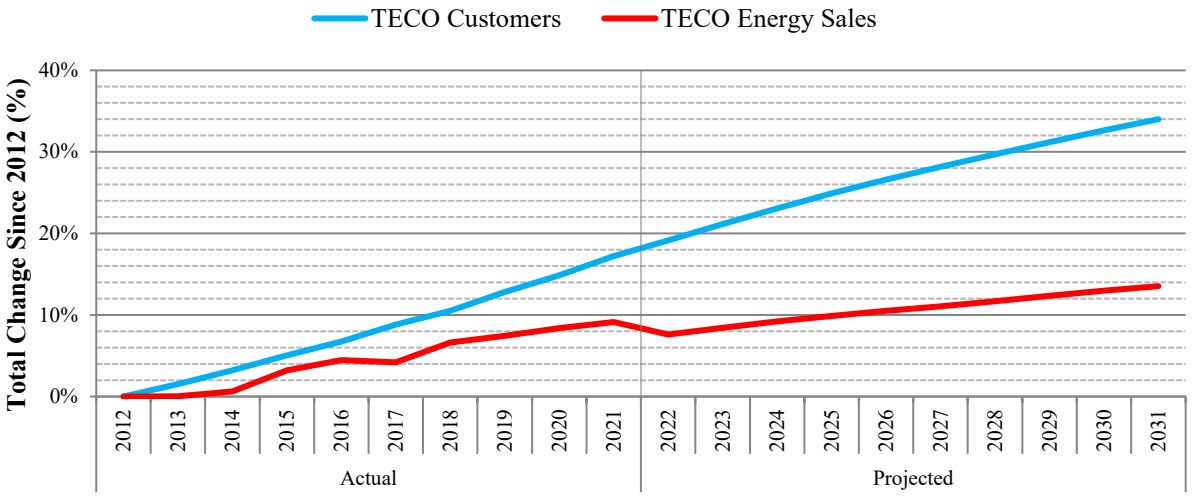
In 2021, TECO had approximately 802,050 customers and annual retail energy sales of 20,093 GWh or approximately 8.6 percent of Florida's annual retail energy sales. Figure 25 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012. Over the last 10 years, TECO's customer base has increased by 17.2 percent, while retail sales have increased by 9.1 percent.

TECO's total customer growth in 2021 averaged 2.0 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 1.3 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 decreased in 2021, primarily due to milder weather than in the prior year. In addition, the effects of COVID-19 are not as prevailing as in 2020, evidenced by people returning to work places/schools which results in a reduced residential energy consumption compared to what was experienced during the pandemic-triggered stay-at-home period. Over the next 10 years, the utility expects average energy consumption per residential customer to decline at an average annual rate of 0.4 percent. The primary drivers behind the decline are increases in appliance efficiencies, lighting efficiencies, energy efficiency in new homes, conservation efforts, and changes in housing mix. TECO's commercial per customer usage in 2021 was 0.3 percent lower than in 2020, and such usage is projected to remain relatively flat over the current TYSP forecast horizon. The utility's industrial per customer usage in 2021 was 0.1 percent higher than what was achieved in 2020. This is mainly attributable to the industrial phosphate sector having less self-serving generation and more purchases from TECO. Over the forecast horizon, the average usage per industrial customer is expected to decrease slightly by an average of 0.1 percent per year.

For the next 10 years, TECO's retail energy sales are projected to grow at an annual average rate of 0.6 percent. This is below the customer growth rate of 1.3 percent primarily due to continued per customer energy consumption declines in the residential sector, as well as declines in the phosphate sector as the mining industry continues to move south and out of the utility's service territory.

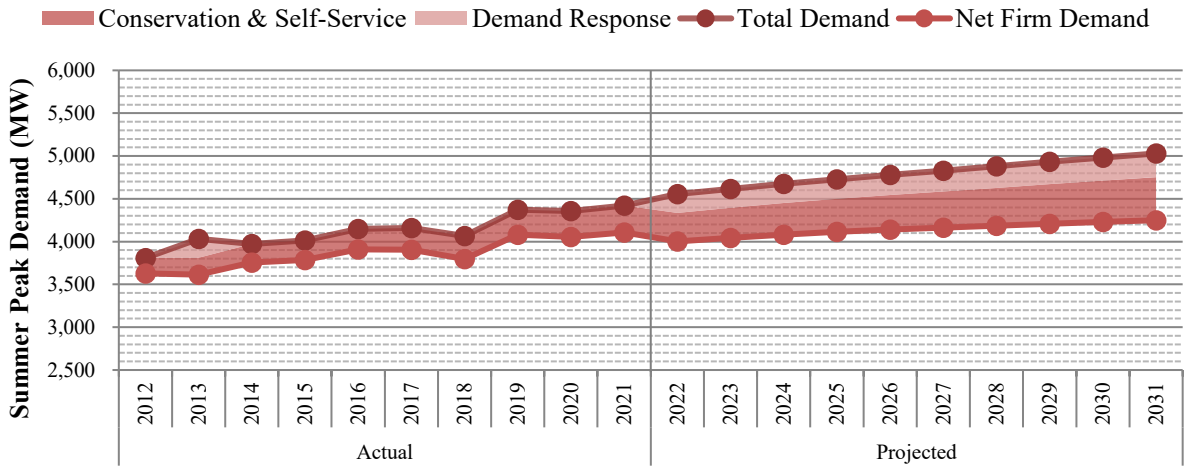
Figure 25: TECO Growth

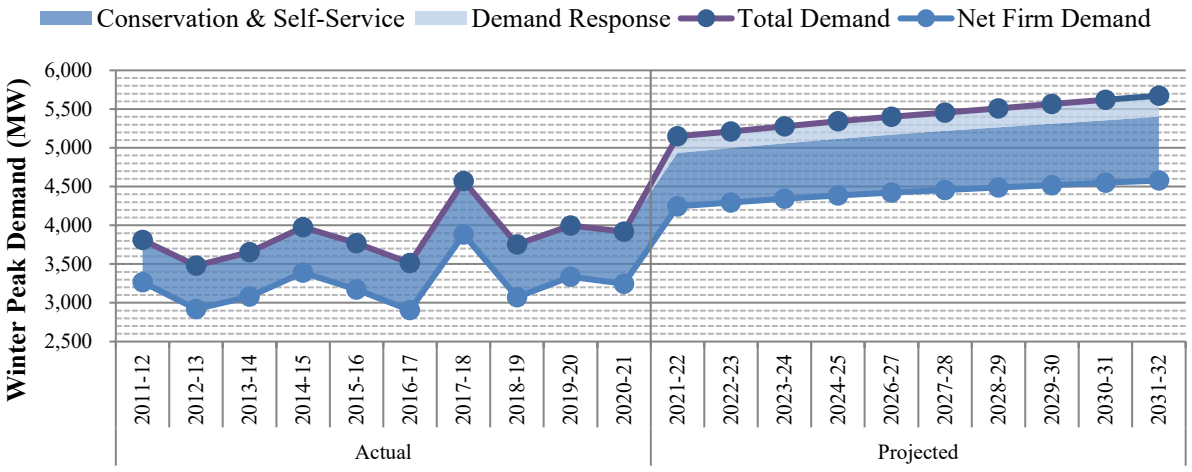


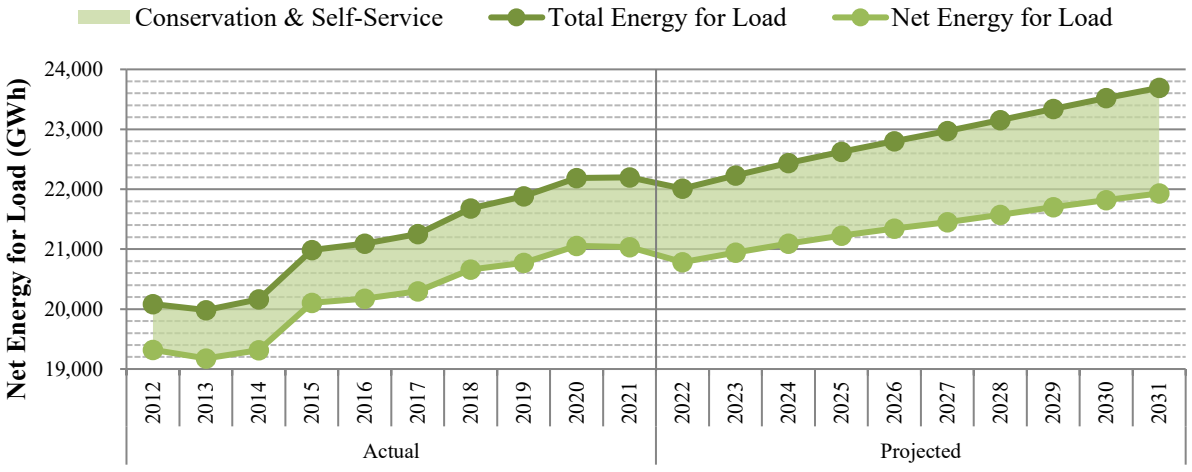
Source: 2022 Ten-Year Site Plan

The three graphs in Figure 26 show TECO's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. 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 the summer of 2013 and winters of 2017-2018 and 2018-2019. 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 November 2019, the Commission established demand-side management goals for TECO for the years 2020 through 2024. In August 2020, the Commission approved TECO's plan designed to achieve the 2020-2024 DSM goals. In preparing its 2022 Ten-Year Site Plan seasonal peak demand and energy forecasts, TECO assumes the trends in these goals will be extended through the forecast period (through 2031).

Figure 26: TECO Demand and Energy Forecasts







Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 17 shows TECO's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. Based on its 2022 Ten-Year Site Plan, natural gas is used for the majority of TECO's energy generation. Natural gas accounts for approximately 77 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 6.0 percent to 20.4 percent by 2031. TECO projects the fourth highest percentage of renewable energy generation in 2031 of the TYSP Utilities.

Table 17: TECO Energy Generation by Fuel Type

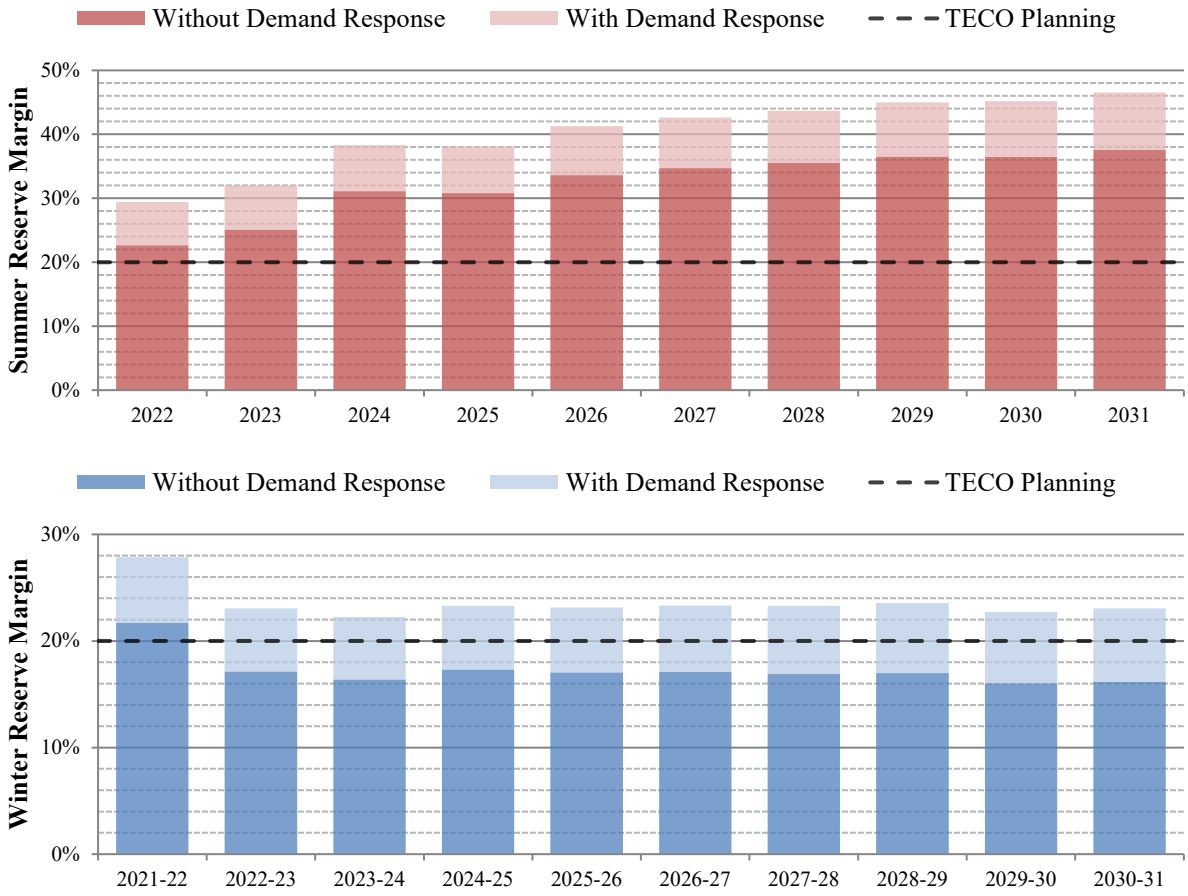
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	16,124	**76.7%**	17,278	**78.8%**
Coal	1,358	**6.5%**	160	**0.7%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	2	**0.0%**	0	**0.0%**
Renewable	1,252	**6.0%**	4,481	**20.4%**
Interchange	77	**0.4%**	0	**0.0%**
NUG & Other	2,220	**10.6%**	12	**0.1%**
Total	**21,033**		**21,931**	

Source: 2022 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 27 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 are being controlled by its winter peak. 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 27: TECO Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

TECO plans one unit retirement and multiple unit additions during the planning period, as described in Table 18. TECO anticipates retiring its natural gas-fired Big Bend Unit 3. For natural gas-fired units, TECO plans to add two internal combustion units and convert Big Bend Unit 1, a former coal unit, along with Big Bend Units CT5 and CT6 into a combined cycle configuration, providing an incremental 395 MW of generation. TECO also anticipates adding several solar projects over the planning period totaling 1,342 MW, supplemented by the addition of 275 MW of battery storage.

Table 18: TECO Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (Summer)	Notes
			Sum	Sum	
				Retiring Units	
2023	Big Bend 3	NG – ST	395	N/A	
Total Retirements			**395**	N/A	
				New Units	
2022	Sited Solar Facilities	PV	361	202	6 Known Sites
2022	Big Bend Conversion	NG – CC	395	N/A	
2023	Sited Solar Facilities	PV	135	75	2 Known Sites
2023	Dover Solar + Storage 1	PV – BAT	25.0	15	15 MW of Batteries
2023	Unknown Solar	PV	74.5	41.6	
2024	Battery Storage 1	BAT	100	N/A	
2025	Unknown Solar	PV	300	167	Multiple Sites
2025	Reciprocating Engine 1	NG – IC	37	N/A	
2026	Unknown Solar	PV	74.5	41.6	
2027	Battery Storage 2	BAT	50	N/A	
2027	Unknown Solar	PV	74.5	41.6	
2028	Reciprocating Engine 2	NG – IC	37	N/A	
2028	Unknown Solar	PV	74.5	41.6	
2029	Battery Storage 3	BAT	50	N/A	
2029	Unknown Solar	PV	74.5	41.6	
2030	Unknown Solar	PV	74.5	41.6	
2031	Battery Storage 4	BAT	50	N/A	
2031	Unknown Solar	PV	74.5	41.6	
Total New Units			**2,179**	**760.2**	
Net Additions			**1,784**		

Source: 2022 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 that 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 2022 Ten-Year Site Plan suitable for planning purposes.

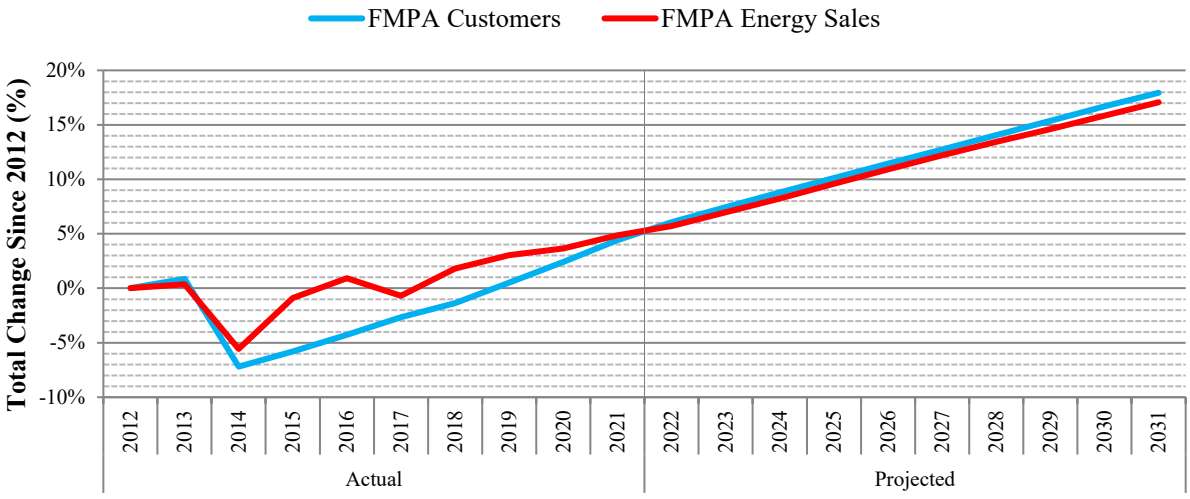
Load & Energy Forecasts

In 2021, FMPA had approximately 276,418 customers and annual retail energy sales of 5,944 GWh or approximately 2.5 percent of Florida's annual energy sales. Figure 28 illustrates the utility's historic and forecasted growth rates in customers and energy sales beginning in 2012. Over the last 10 years, FMPA's customer base has increased by 4.41 percent, while energy sales have increased by 4.85 percent.

FMPA's per-customer energy usage has been flat to declining in both the residential and non-residential sectors in recent years. In response to staff data requests, FMPA noted that there were 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 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 Great Recession. FMPA expects that an explicit projection of the impact of increased EV adoption will be infused into the forecast in the future.

For the current 10-year forecast horizon, the utility is projecting a 1.19 percent average annual growth rate for its customer base, and a 1.14 percent average annual growth rate for energy sales.

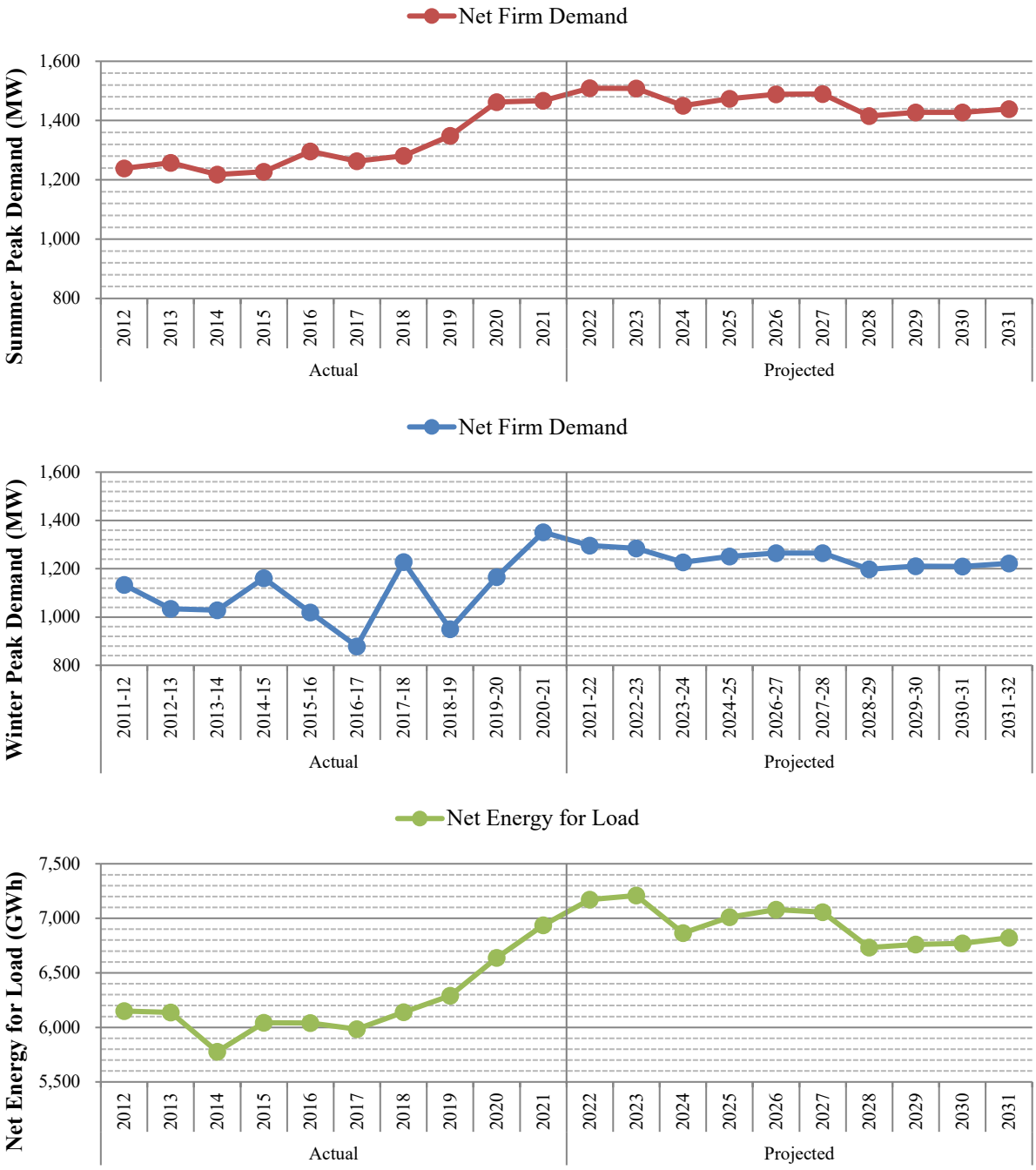
Figure 28: FMPA Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 29 show FMPA's seasonal peak demand and net energy for load for the historic years 2012 through 2021 and forecast years 2022 through 2031. 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 29: FMPA Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 19 shows FMPA's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. 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 89 percent of energy would still be sourced from natural gas and nuclear. FMPA projects serving 11 percent of its net energy for load with renewable resources by the end of the planning period.

Table 19: FMPA Energy Generation by Fuel Type

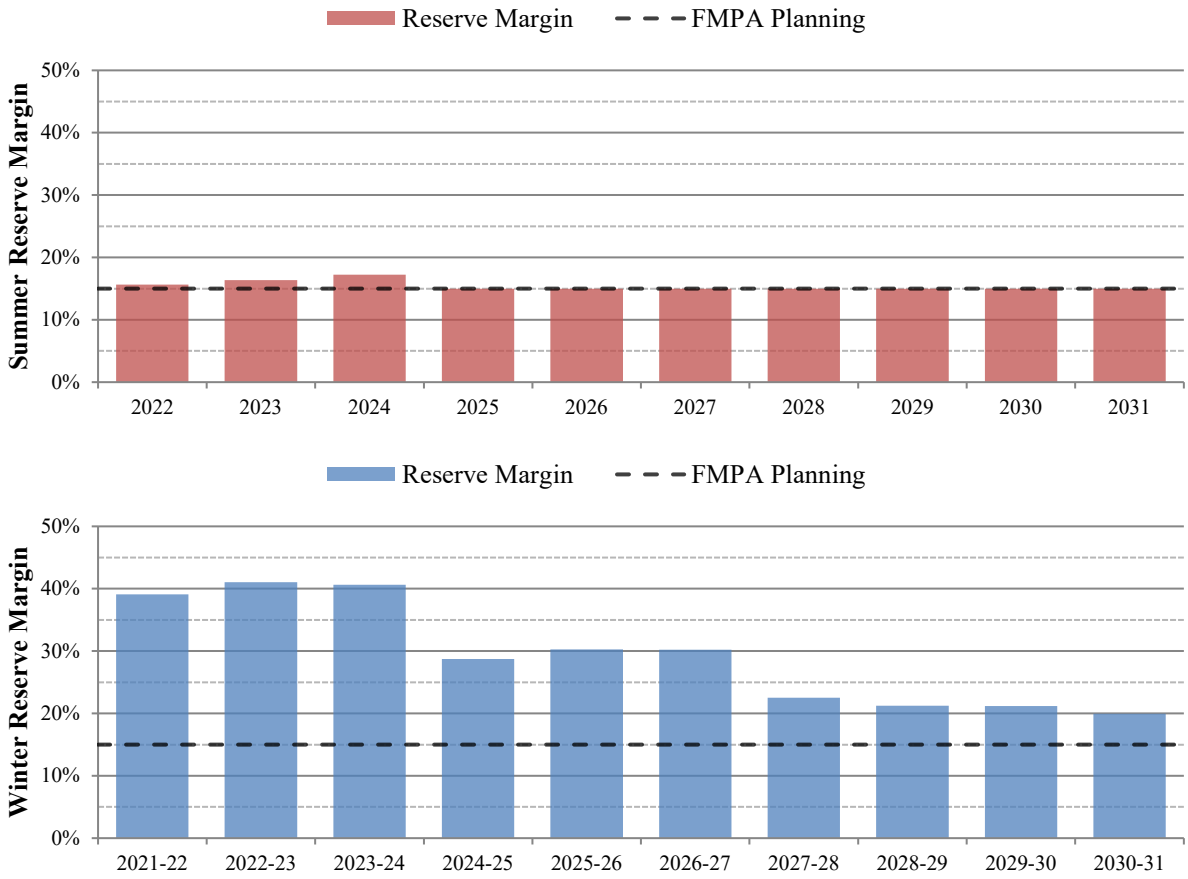
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	5,271	**76.0%**	5,675	**83.2%**
Coal	1,126	**16.2%**	0	**0.0%**
Nuclear	383	**5.5%**	390	**5.7%**
Oil	3	**0.0%**	1	**0.0%**
Renewable	154	**2.2%**	757	**11.1%**
Interchange	0	**0.0%**	0	**0.0%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**6,937**		**6,823**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

FMPA utilizes a 15 percent planning reserve margin criterion. Figure 30 displays the forecast planning reserve margin for FMPA through the planning period for both seasons. As shown in the figure, FMPA's generation needs are controlled by its summer peak throughout the planning period.

Figure 30: FMPA Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

FMPA plans on retiring Stanton Unit 1, a coal unit, in 2025 as described in Table 20. The utility also plans the conversion of Stanton Unit 2 from coal-fired to natural gas-fired in 2027. FMPA also has entered in two purchased power agreements (PPAs) that will add a total of 154 MW of solar capacity by the end of 2024. FMPA anticipates entering into additional PPAs that will add another 100 MW of solar capacity within the planning period.

Table 20: FMPA Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW) Sum	Notes
Retiring Units				
2025	Stanton Unit 1	BIT – ST	118	Jointly Owned with OUC
Total Retirements			**118**	
Net Additions			**(118)**	

Gainesville Regional Utilities (GRU)

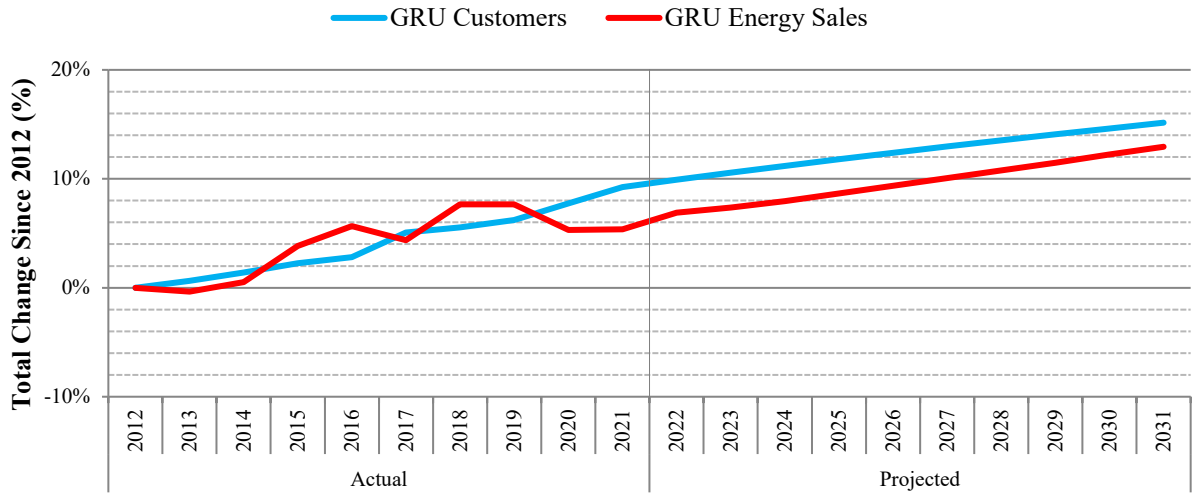
GRU is a municipal utility and the smallest electric utility required to file a Ten-Year Site Plan. The utility's service territory is within the FRCC region and consists of the City of Gainesville and its surrounding area. GRU also provides wholesale power to the City of Alachua and Clay Electric Cooperative. 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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

In 2021, GRU had approximately 101,117 customers and annual retail energy sales of 1,791 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 9.25 percent, while retail sales have increased by 5.35 percent. Figure 31 illustrates GRU's historic and forecasted growth rates in customers and retail energy sales beginning in 2012.

GRU noted that over the past 10 years, its residential energy consumption per customer increased 0.15 percent per year, while its non-residential consumption per customer declined 0.84 percent per year. For the next 10 years, the utility projects that both residential and non- residential energy consumption per customer will stay constant. For the current 10-year forecast horizon, GRU's number of customers is projected to grow at an annual average rate of 0.52 percent, and its retail energy sales are projected to grow at an annual average rate of 0.61 percent. The utility indicated that its projected growth of retail energy sales is supported by its projected increase in the number of customers and, to a small degree, offset by flat or declining energy consumption per customer. The utility also noted that load associated with electric vehicle charging is anticipated to support energy sales more in this forecast than in past forecasts.

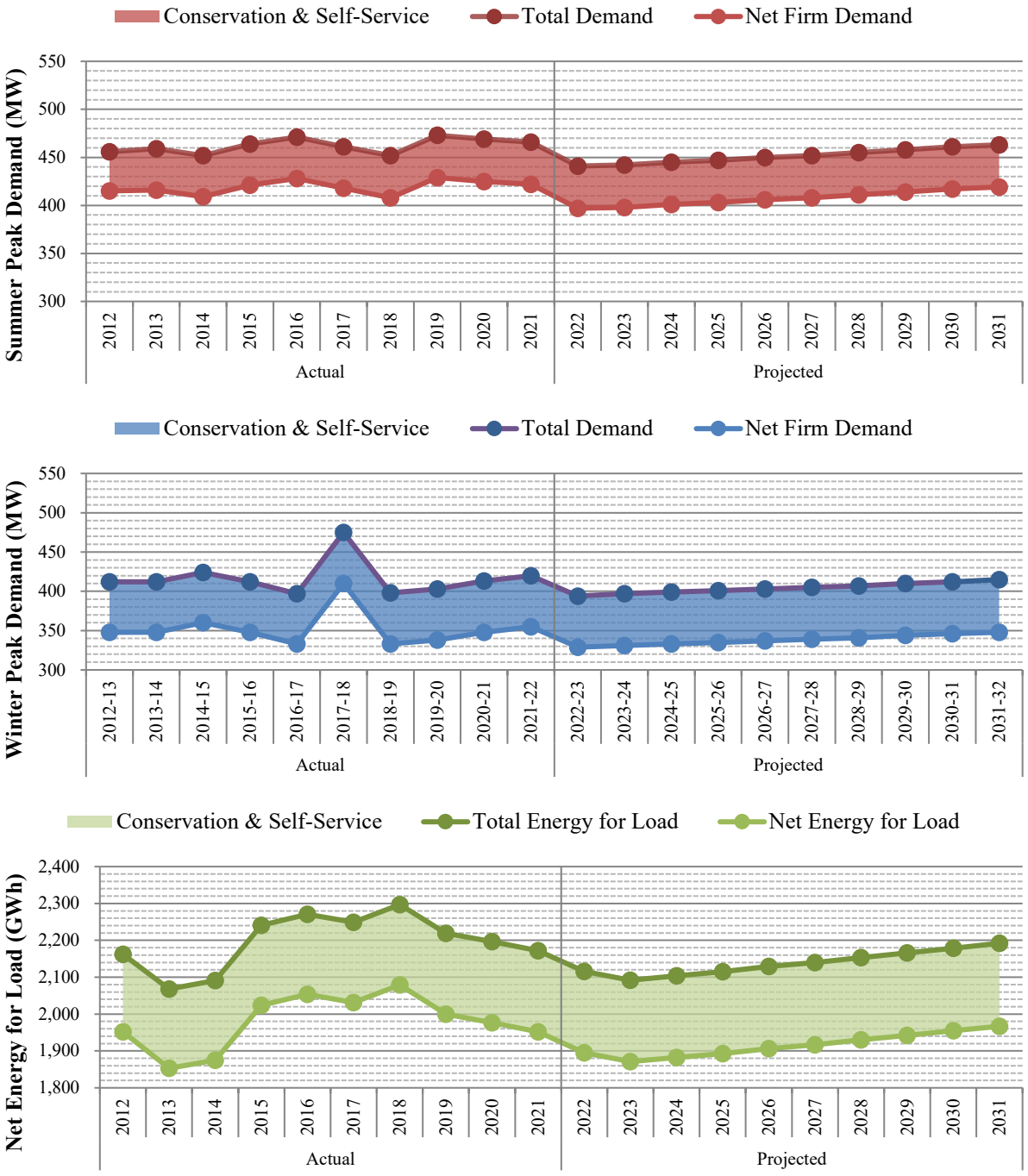
Figure 31: GRU Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 32 show GRU's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. GRU engages in multiple energy efficiency programs to reduce customer peak demand and annual energy for load. The graphs in Figure 32 include the impact of these demand-side management programs.

Figure 32: GRU Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 21 shows GRU's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. In 2021, natural gas was the primary fuel followed by renewables and coal respectively. GRU currently has the highest percentage contribution of renewables in Florida for net energy for load. By 2031 natural gas and renewables are expected to be the only generation, with coal-fired generation eliminated. GRU is forecasted to drop to the second highest percent contribution from renewables for net energy for load by 2031.

Table 21: GRU Energy Generation by Fuel Type

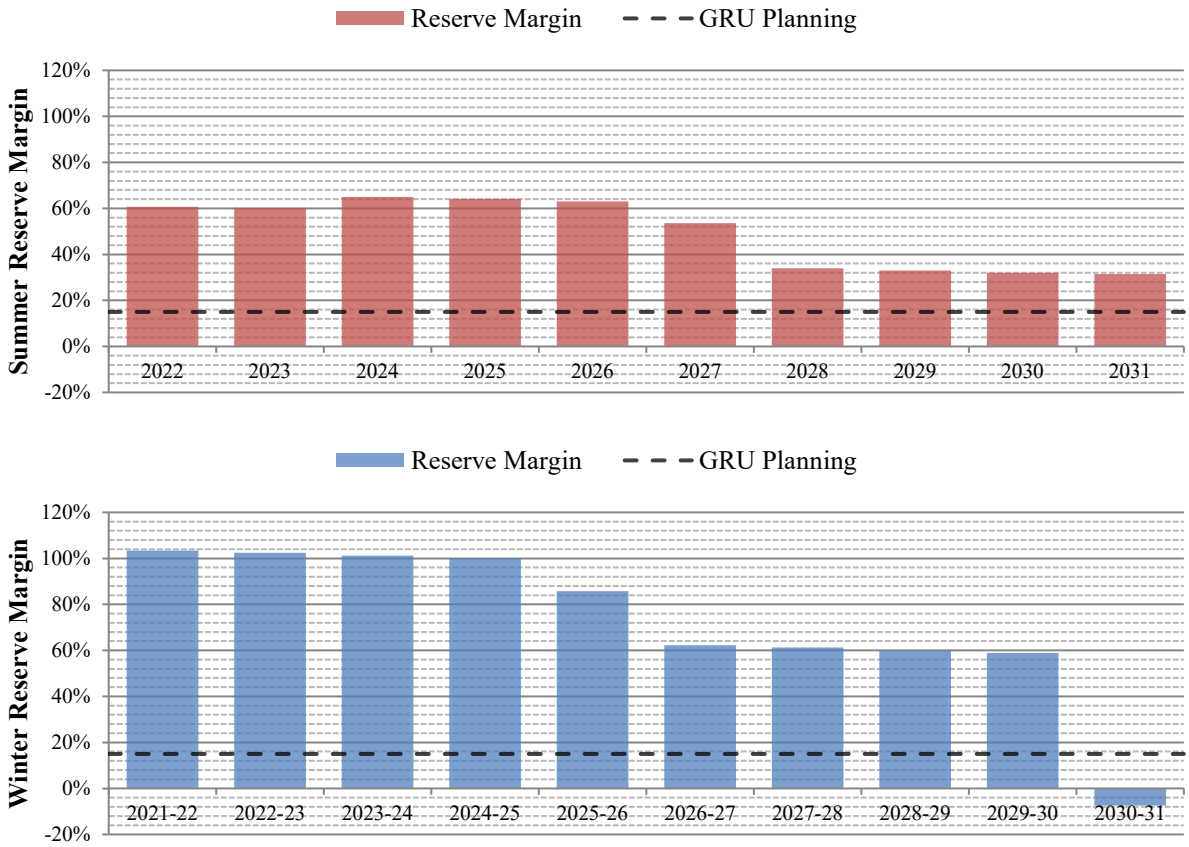
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	1,004	**51.4%**	1,389	**70.6%**
Coal	320	**16.4%**	0	**0.0%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	6	**0.3%**	0	**0.0%**
Renewable	612	**31.4%**	586	**29.8%**
Interchange	10	**0.5%**	-8	**-0.4%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**1,952**		**1,967**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

GRU utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 33 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. GRU's reserve margin, is projected to be negative in the Winter of 2030/31 due to a unit retiring in 2031. As GRU approaches this date, the utility will continue to evaluate how to meet its 15 percent reserve margin criterion. Staff believes this to be acceptable for planning purposes this year. Staff will evaluate future plans to ensure reserve margin is maintained.

Figure 33: GRU Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

GRU currently plans on retiring two natural gas-fired combustion turbines in 2026, a natural gas-fired steam unit in 2027, and a coal unit in 2031 as described in Table 22. GRU entered into a 20 year contact that is expected to deliver an additional 50 MW of solar capacity, 27.5 MW of which are considered firm, through a PPA with an expected in-service year of 2024.

Table 22: GRU Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW) Sum
Retiring Units			
2026	Deerhaven GT01 & GT02	NG – CT	35
2027	Deerhaven FS01	NG – ST	75
2031	Deerhaven FS02	BIT – ST	228
Total Retirements			**338**
Net Additions			**(338)**

Source: 2022 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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

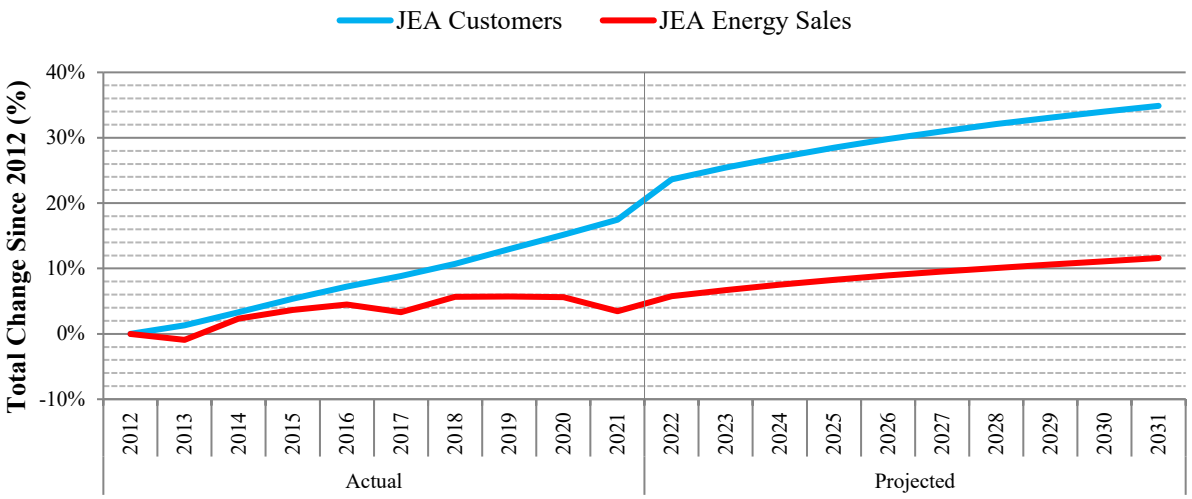
In 2021, JEA had approximately 493,039 customers and annual retail energy sales of 12,066 GWh or approximately 5.2 percent of Florida's annual retail energy sales. Figure 34 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012. Over the last 10 years, JEA's customer base has increased by 17.45 percent, while retail sales have increased by 3.45 percent.

JEA indicated that, overall, Moody's Analytics forecast for all parameters used in the utility's 2022 TYSP forecast of customer growth are lower as compared to the previous forecasts. As a result, JEA noted a lower forecast for customers as compared to its 2021 forecast.

JEA projected that the average annual energy consumption per customer will decrease by 0.3 percent and 1.1 percent, respectively, for residential and commercial classes over the forecasted 10-year period. The utility noted that demand-side management programs, customer behavioral change, the increase in electric rates, as well as housing type and federal central air conditioner-related requirements are contributors to these declines in per-customer energy consumption. However, JEA expects a small growth of 0.1 percent in average annual industrial energy consumption for the next 10 years.

For the next 10 years, the JEA's forecast results indicate that the customer numbers are projected to grow at an average annual rate of 0.97 percent; and the retail energy sales are projected to grow at an average annual rate of 0.81 percent.

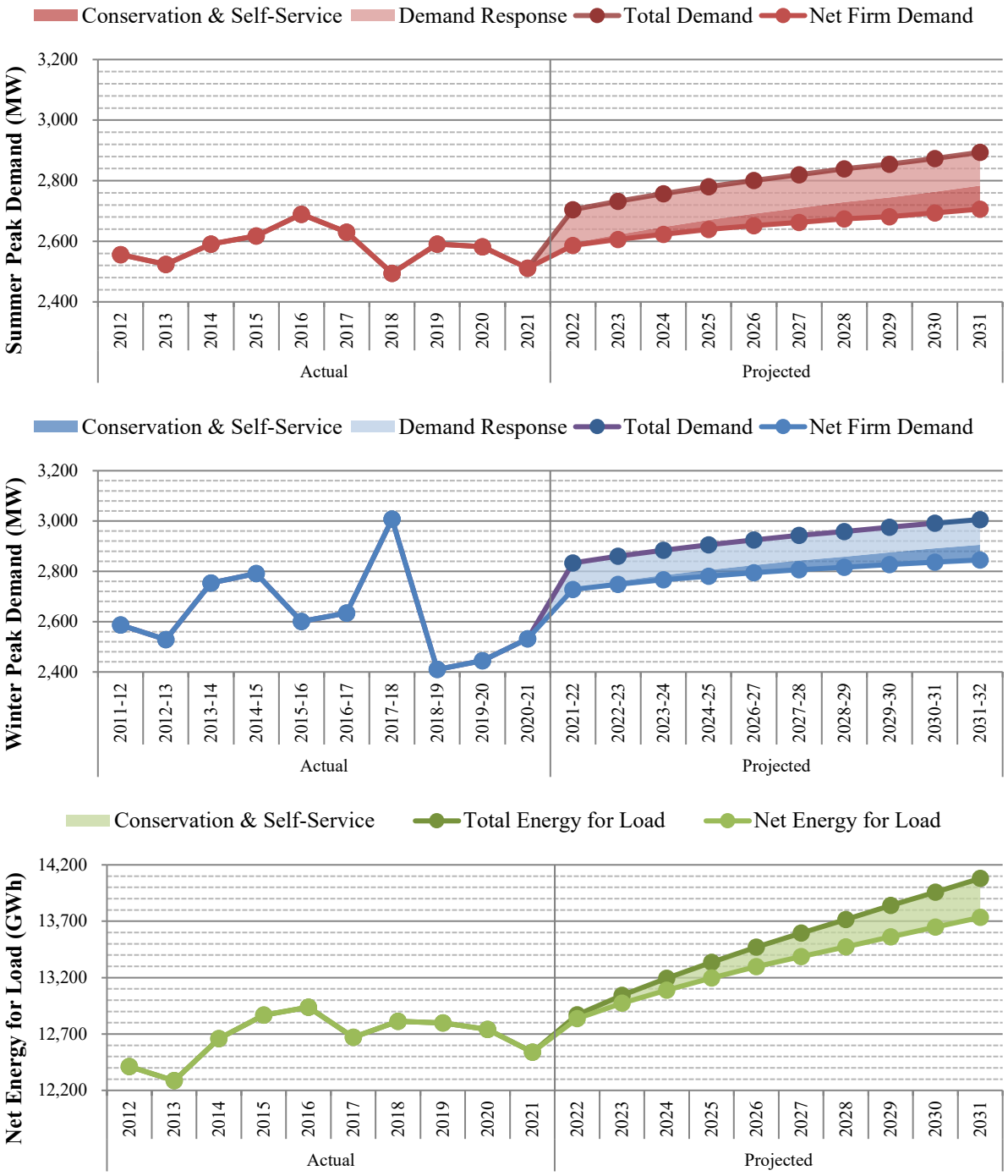
Figure 34: JEA Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 35 show JEA's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. 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. 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. In November 2019, the Commission established demand side management goals for JEA for the years 2020 through 2024. In July 2020, the Commission approved JEA's plan designed to achieve the 2020-2024 DSM goals. In preparing its 2022 Ten-Year Site Plan seasonal peak demand and energy forecasts, JEA assumes the trends in these goals will be extended through the forecast period (through 2031).

Figure 35: JEA Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 23 shows JEA's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. While natural gas was the dominant fuel source in 2021, coal was JEA's second most utilized fuel source. JEA's 2022 Ten-Year Site plan projects that a JEA will reduce its use of coal while increasing purchases. JEA has the highest percentage of energy from interchange, primarily from a contract with the Municipal Electric Authority of Georgia for 200 MW from the nuclear Vogtle Units 3 and 4.

Table 23: JEA Energy Generation by Fuel Type

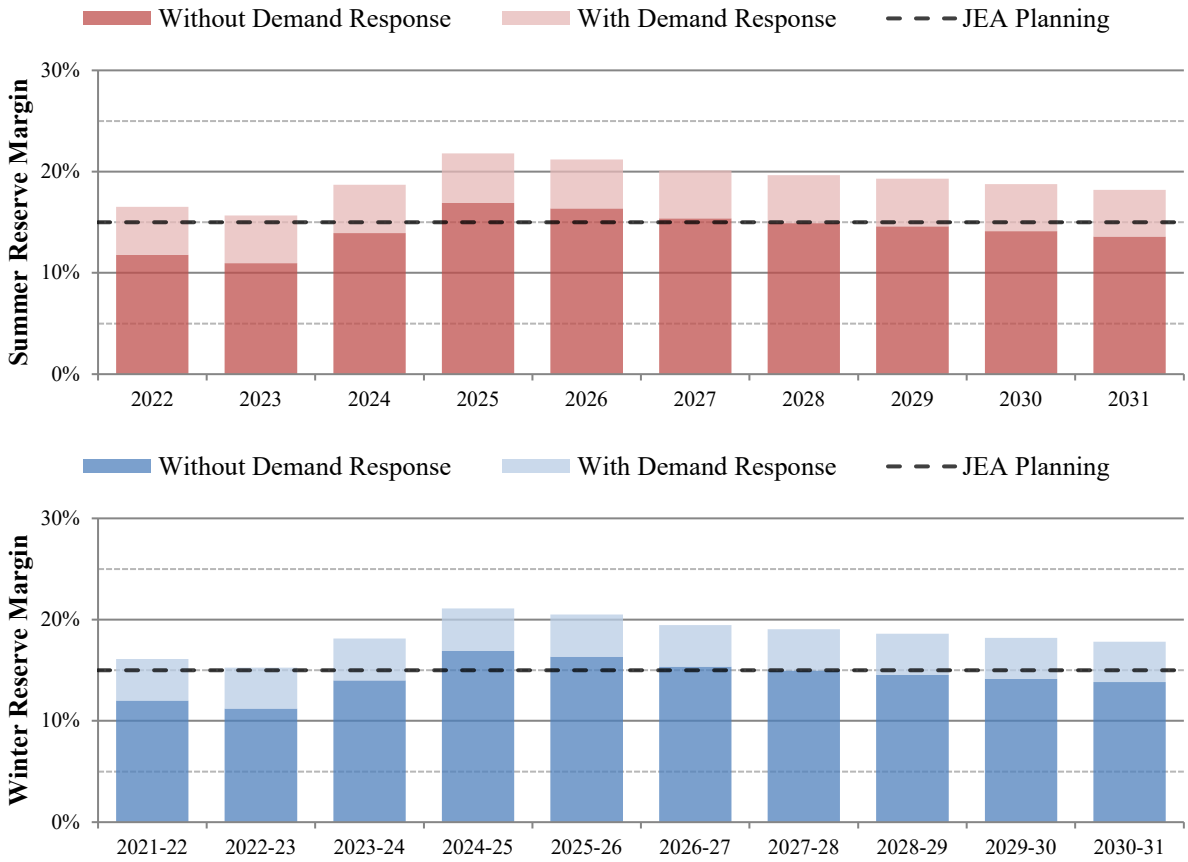
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	7,673	**61.2%**	7,617	**55.5%**
Coal	2,742	**21.9%**	2,570	**18.7%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	16	**0.1%**	28	**0.2%**
Renewable	166	**1.3%**	82	**0.6%**
Interchange	1,943	**15.5%**	3,437	**25.0%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**12,540**		**13,734**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

JEA utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 36 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 36: JEA Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

JEA retired its share of Scherer Unit 4 on January 1, 2022, as detailed in Table 24. JEA plans no unit additions during the planning period.

Table 24: JEA Energy Generation by Fuel Type

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW) Sum	Notes
Retiring Units				
2022	Scherer Unit 4	BIT - ST	198	Jointly Owned with FPL
Net Additions			**(198)**	

Source: 2022 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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

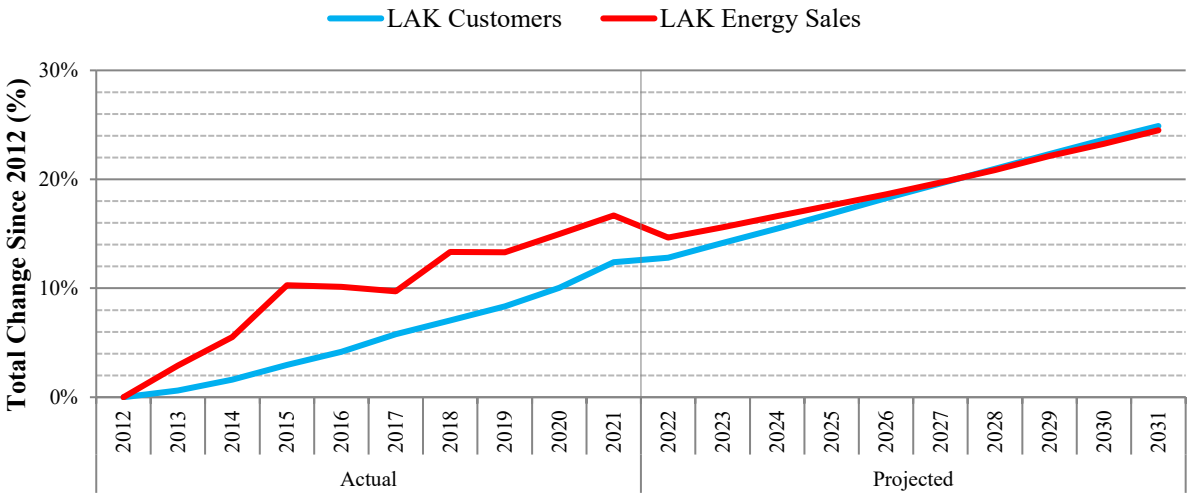
In 2021, LAK had approximately 137,162 customers and annual retail energy sales of 3,210 GWh or approximately 1.4 percent of Florida's annual retail energy sales. Figure 37 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012. Over the last 10 years, LAK's customer base has increased by 12.68 percent, while retail sales have grown by 16.48 percent.

In recent years, LAK's service area in Polk County has seen a boom in e-commerce warehouse development. Particularly, LAK has benefited from the relocation of Amazon's air-hub to the utility's service area in 2020 and the continuing trend of work from home. As a result, LAK experienced 2.2 percent total customer growth in 2021, the highest growth rate for the utility in the past 10 years.

LAK noted that its residential average energy consumption per customer 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. The utility's commercial average energy consumption per customer 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 the industrial customers that are projected to be added are expected to be mostly classified in the "small demand" industrial category.

LAK noted that, although the average energy consumption per customer is declining or flat for all three main rate classes, positive customer growth rates are expected to compensate for average use declines. The utility assumed the impact of conservation programs are already in the energy sales history and made no additional assumptions regarding their impact. For the next 10 years, the utility's forecast results indicated that its number of customers are projected to grow at an average annual rate of 1.14 percent, and its retail energy sales are projected to grow at an average annual rate of 0.92 percent.

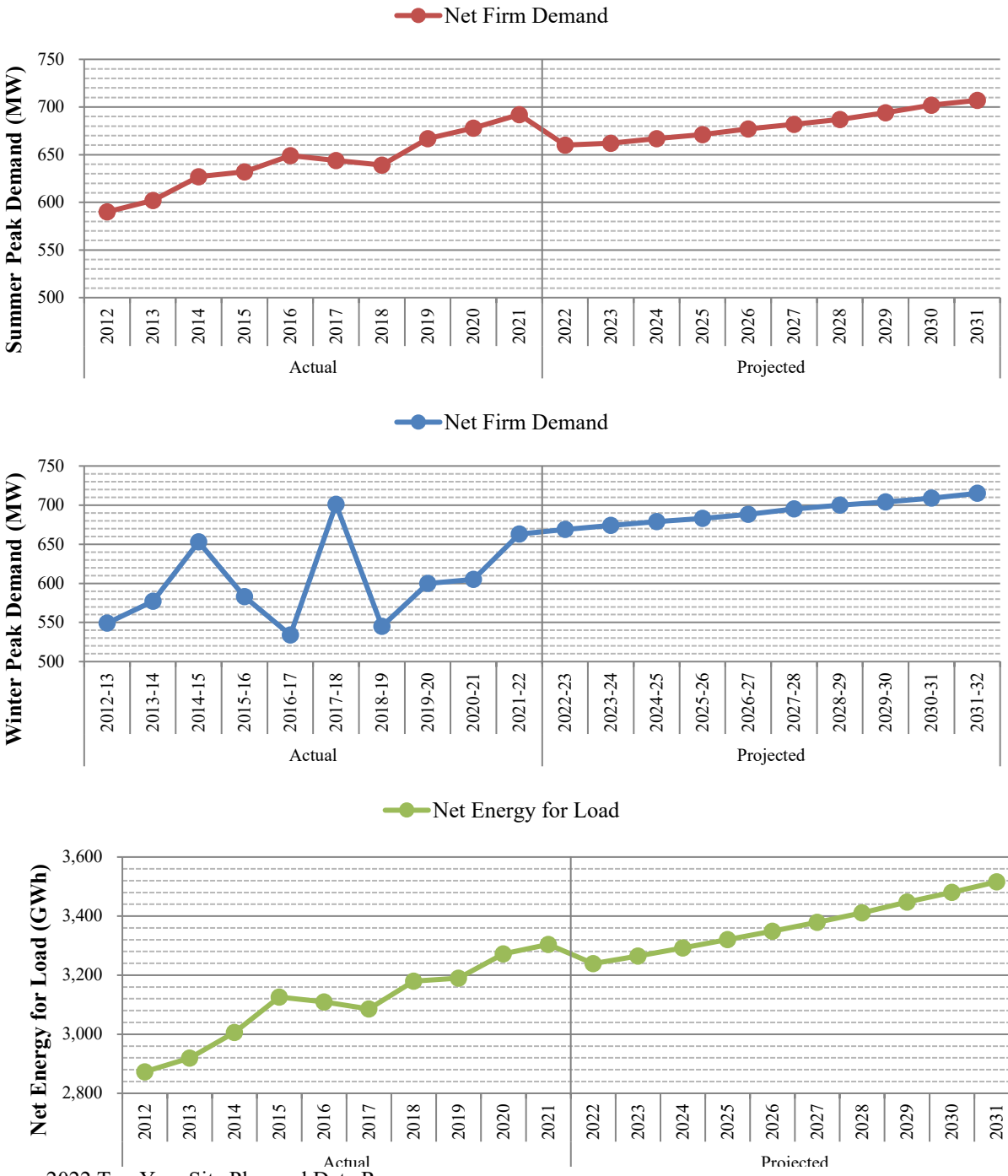
Figure 37: LAK Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 38 show LAK's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. LAK offers energy efficiency programs, the impacts of which are included in the graphs.

Figure 38: LAK Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 25 shows LAK's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. LAK uses natural gas as its primary fuel type for energy, with coal representing about 13 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 2031.

Table 25: LAK Energy Generation by Fuel Type

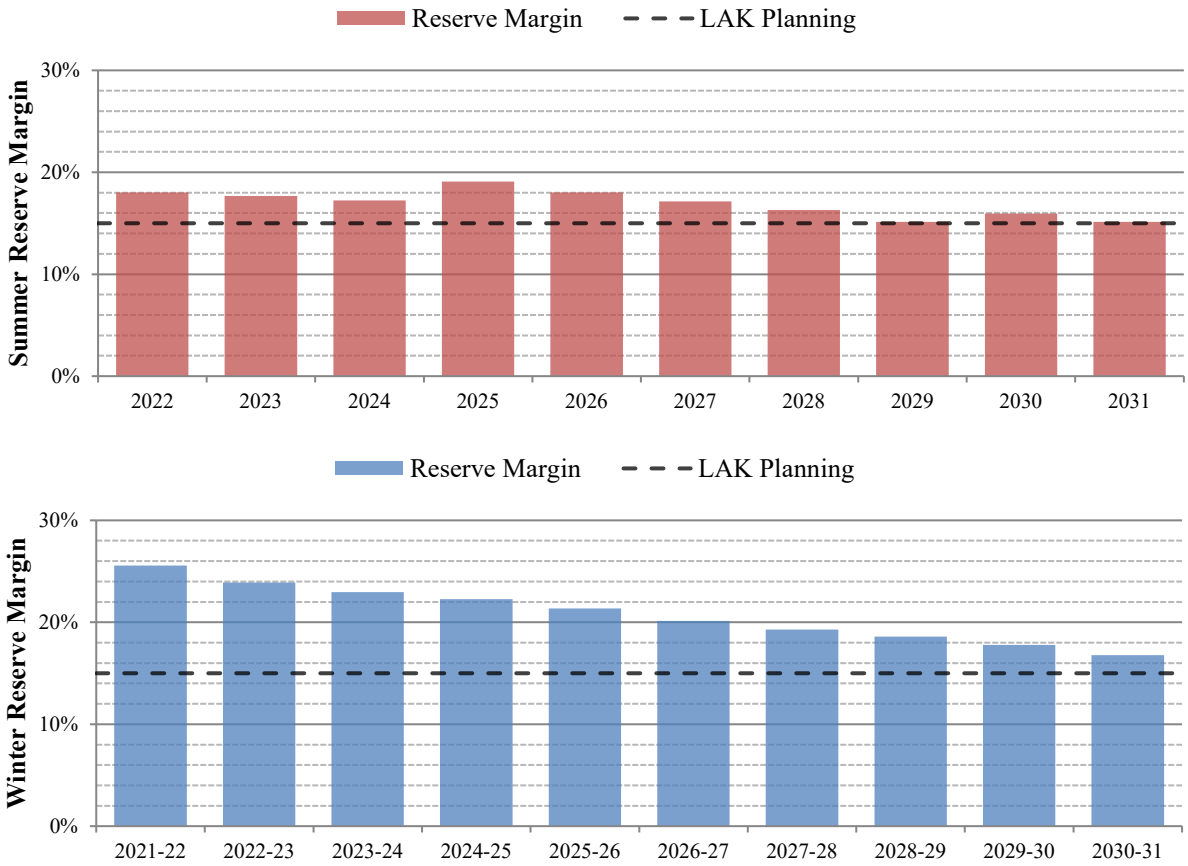
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	2,208	**66.8%**	3,071	**87.3%**
Coal	434	**13.1%**	0	**0.0%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	0	**0.0%**	0	**0.0%**
Renewable	26	**0.8%**	153	**4.4%**
Interchange	0	**0.0%**	0	**0.0%**
NUG & Other	636	**19.2%**	292	**8.3%**
Total	**3,304**		**3,516**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

LAK utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 39 displays the forecast planning reserve margin for LAK through the planning period for both seasons. 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 39: LAK Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

LAK is adding a set of solar sites and natural gas internal combustion engines during the planning period, as detailed in Table 26. LAK is also adding approximately 50 MW of additional capacity through PPAs during the planning period.

Table 26: LAK Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW)	Solar Firm Capacity (MW)	Notes
			Sum	Sum	
New Units					
2024	McIntosh	PV	16	8	
2024	Mcintosh Units ME1-ME-6	NG-IC	120	N/A	6 Reciprocating Engines
2025	McIntosh	PV	34	17	
Net Additions			**170**	**25**	

Source: 2022 Ten-Year Site Plan and Data Responses

Orlando Utilities Commission (OUC)

OUC is a municipal utility and Florida's sixth 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 2022 Ten-Year Site Plan suitable for planning purposes.

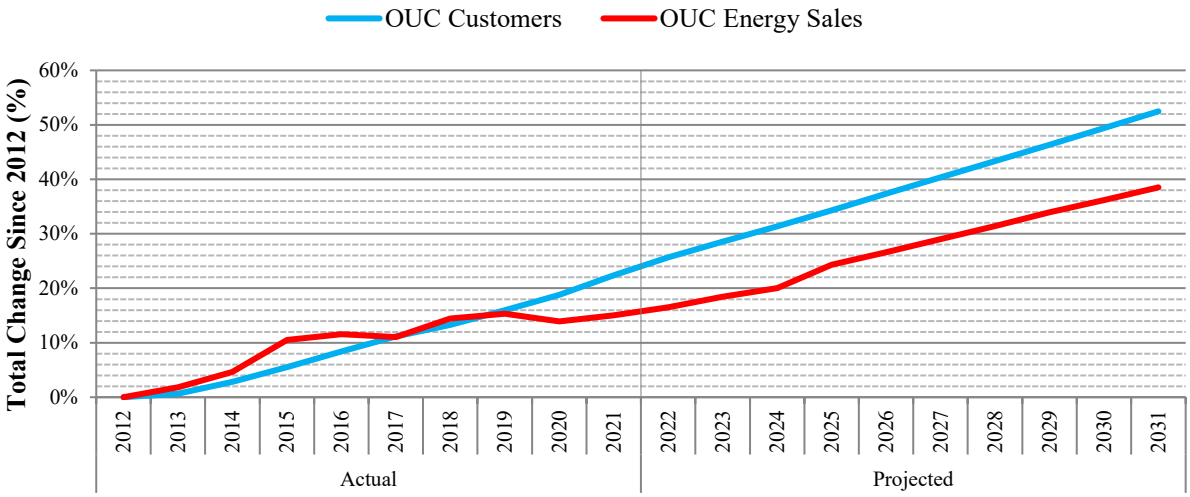
Load & Energy Forecasts

In 2021, OUC had approximately 261,045 customers and annual retail energy sales of 6,807 GWh or approximately 2.9 percent of Florida's annual retail energy sales. Over the last 10 years, OUC's customer base has increased by 22.37 percent, while its retail energy sales have increased by 15.06 percent, approximately. Figure 40 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012.

OUC experienced a continued decline in average use per residential customer in 2021. The utility noted that such decline has tapered dramatically since the beginning of the 10-year historic period due to the increased saturation of more efficient HVAC equipment and other electrical devices, as well as customer conservation efforts. OUC's forecasted residential average per-customer usage is expected to remain relatively flat as increased electric vehicle charging mitigates further saturation of more efficient electrical equipment and conservation efforts. The utility's average use per commercial customer also experienced a slight, long-term decline, which was greatly exacerbated by the impacts of COVID-19, but is expected to return to pre-COVID levels.

Over the forecast horizon, OUC is projecting growth in the number of customers at a slightly increased average annual rate of 2.17 percent, and retail sales at a moderately increased average annual rate of 1.94 percent. OUC noted that the main contributors to the projected higher customer growth rate include the increased population and household numbers in its service area. The main drivers for the projected higher growth rate of the energy sales than what was projected in the past include the recovery from COVID-19 effects, the projected growth in electric vehicle charging load, and major commercial expansions by Universal Studios and the Orlando International Airport.

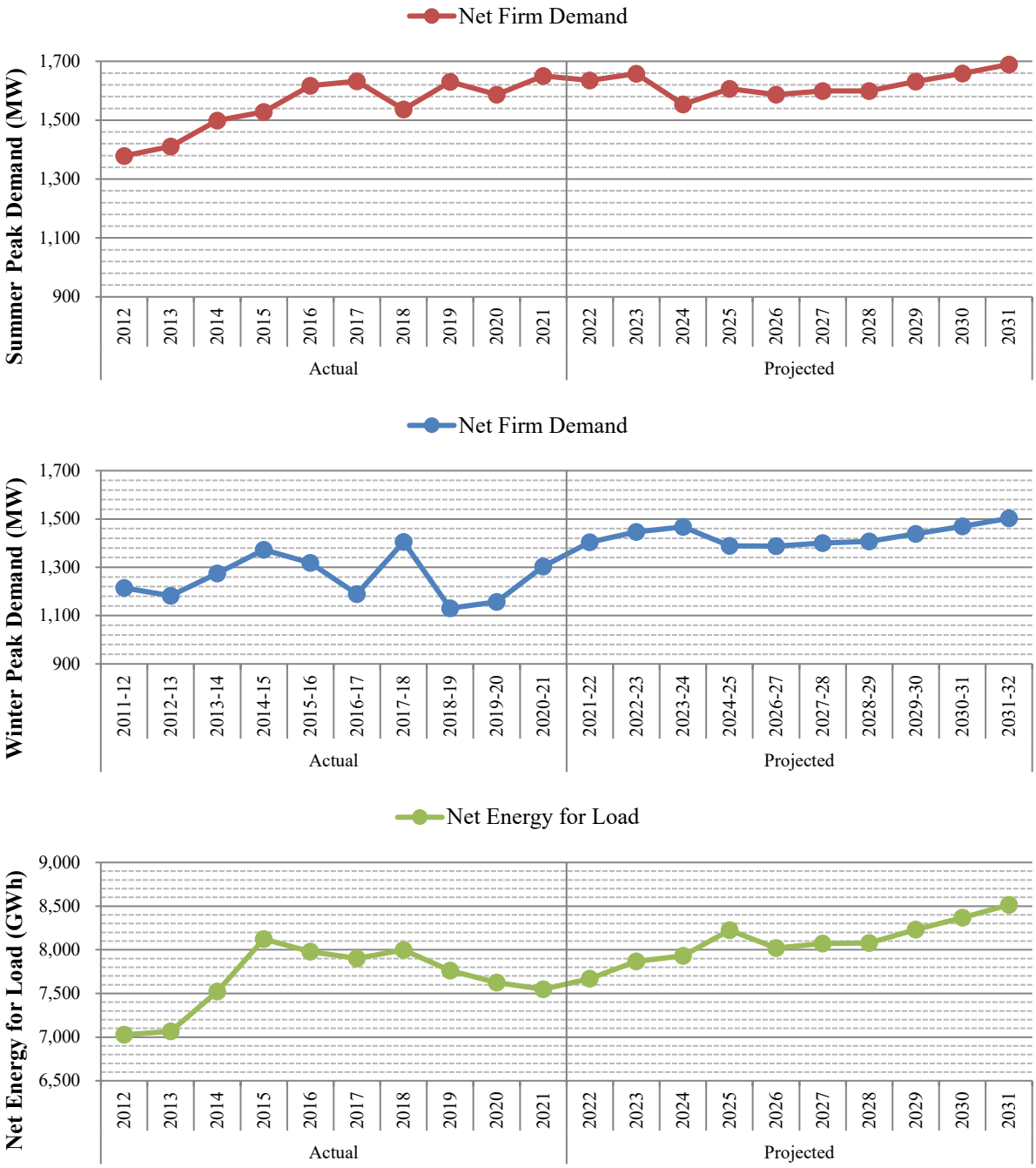
Figure 40: OUC Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 41 show OUC's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. 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 Commission established demand-side management goals for OUC for the years 2020 through 2024. In June 2020, the Commission approved OUC's plan designed to achieve the 2020-2024 DSM goals. In preparing its 2022 Ten-Year Site Plan seasonal peak demand and energy forecasts, OUC assumes the trends in these goals will be extended through the forecast period (through 2031).

Figure 41: OUC Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 27 shows OUC's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. In 2021, approximately 48 percent of OUC's net energy for load was met with natural gas, while coal, the second most-used fuel, met 42 percent of the demand. By 2031, OUC projects an increase in renewable energy generation from 5 percent to 55.9 percent, the highest in the state and the only utility projected to meet a majority of its net energy for load through renewables. The remainder of energy primarily comes from natural gas and nuclear, with coal generation completely eliminated.

Table 27: OUC Energy Generation by Fuel Type

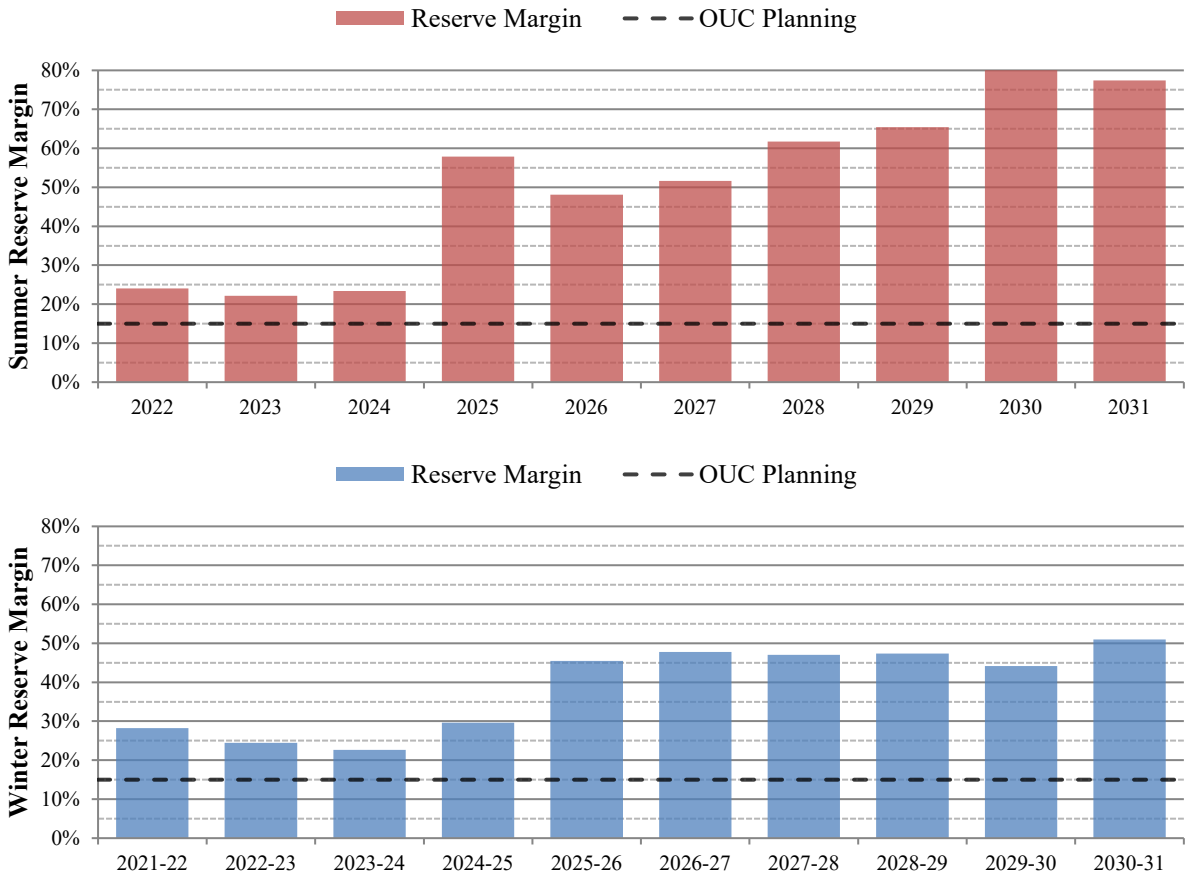
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	3,583	**47.5%**	3,173	**37.3%**
Coal	3,152	**41.8%**	0	**0.0%**
Nuclear	464	**6.1%**	578	**6.8%**
Oil	0	**0.0%**	0	**0.0%**
Renewable	349	**4.6%**	4,764	**55.9%**
Interchange	0	**0.0%**	0	**0.0%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**7,548**		**8,515**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

OUC utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 42 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 42: OUC Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

As detailed in Table 28, OUC plans on retiring one coal-fired unit and adding three natural gas-fired units. OUC plans on retiring Stanton Unit 1, OUC's oldest coal-fired unit, no later than 2025. OUC also plans on converting Stanton Unit 2 from a coal unit to a natural gas unit in 2027. After the conversion in 2027, OUC plans to no longer burn coal as a fuel source. OUC is purchasing the existing Osceola Generating Station Units 1 through 3, natural gas-fired combustion turbines; but, will not be able to fully utilize their capacity during peak periods until 2025. Portions of their capacity will be available before that for summer peaks beginning in 2022.

OUC anticipates entering into PPAs for a total of 1,417 MW of solar capacity and 350 MW of storage. OUC has already signed two of these PPA with NextEra for a total of 149 MW of solar capacity and 40 MW of storage with a planned in-service year of 2023. The additional solar capacity produced by these PPAs will help OUC achieve their pledge of reducing carbon emissions 50 percent by the year 2030.

Table 28: OUC Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW) Sum	Notes
Retiring Units				
2025	Stanton Unit 1	BIT – ST	312	Jointly Owned with FMPA
Total Retirements			**312**	
New Units				
2025	Osceola Generating Station Units 1-3	NG – GT	471	Purchase of existing units.
Total New Units			**471**	
Net Additions			**159**	

Source: 2022 Ten-Year Site Plan

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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

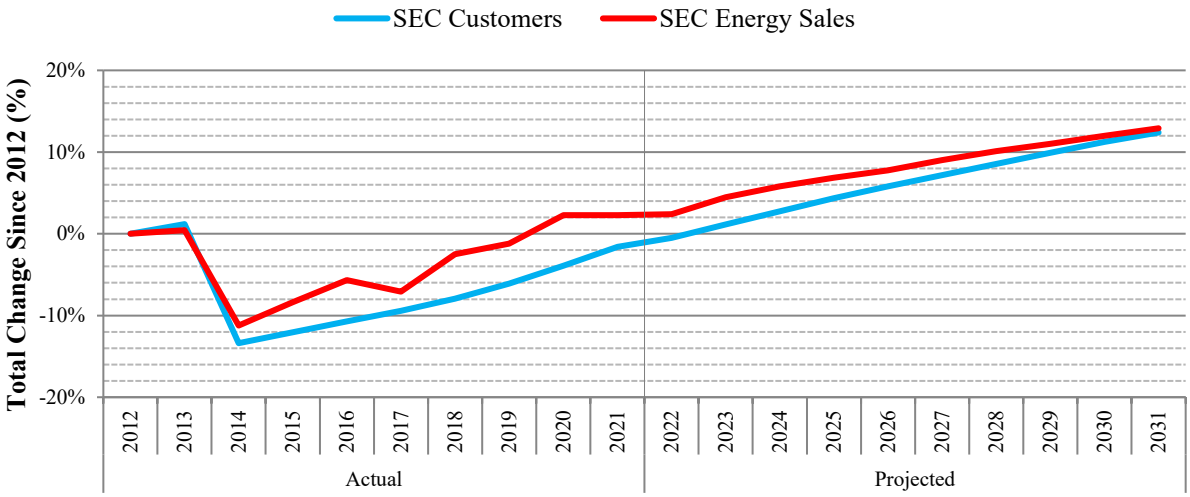
In 2021, SEC member cooperatives had approximately 841,276 customers and annual retail energy sales of 14,930 GWh or approximately 6.4 percent of Florida's annual retail energy sales. Figure 43 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012.

SEC's current TYSP indicated that over the last 10 years, 2012-2021, the utility members' aggregate customer base has decreased by 1.61 percent, compared to a 3.22 percent decrease shown in SEC's 2021 TYSP for the 2011-2020 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. In the current TYSP, the utility reported that its retail sales have increased by 2.27 percent over the historical period 2012-2021, compared to 0.03 percent decrease indicated in its 2021 TYSP for 2011-2020.

SEC states that historically, consumer growth in the Seminole-Member system has grown at a faster rate than the State of Florida as a whole and this trend is expected to continue. The utility noted that the leading indicators for load growth are Florida's expanding economy and net migration prospects into the state, especially from "baby boomer" retirees, and migration impacts of the COVID-19 pandemic. 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.

Over the current 10-year forecast horizon, SEC is projecting an average annual growth rate in its customer base of 1.36 percent, and an average annual growth rate in its retail energy sales of 1.09 percent.

Figure 43: SEC Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 44 show SEC's seasonal peak demand and net energy for load for the historic years 2012 through 2021 and forecast years 2022 through 2031. 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 44.

Figure 44: SEC Demand and Energy Forecasts

Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 29 shows SEC's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. In 2021 SEC used coal as its primary source of fuel. By 2031 natural gas usage is expected to become the primary fuel source.

Table 29: SEC Energy Generation by Fuel Type

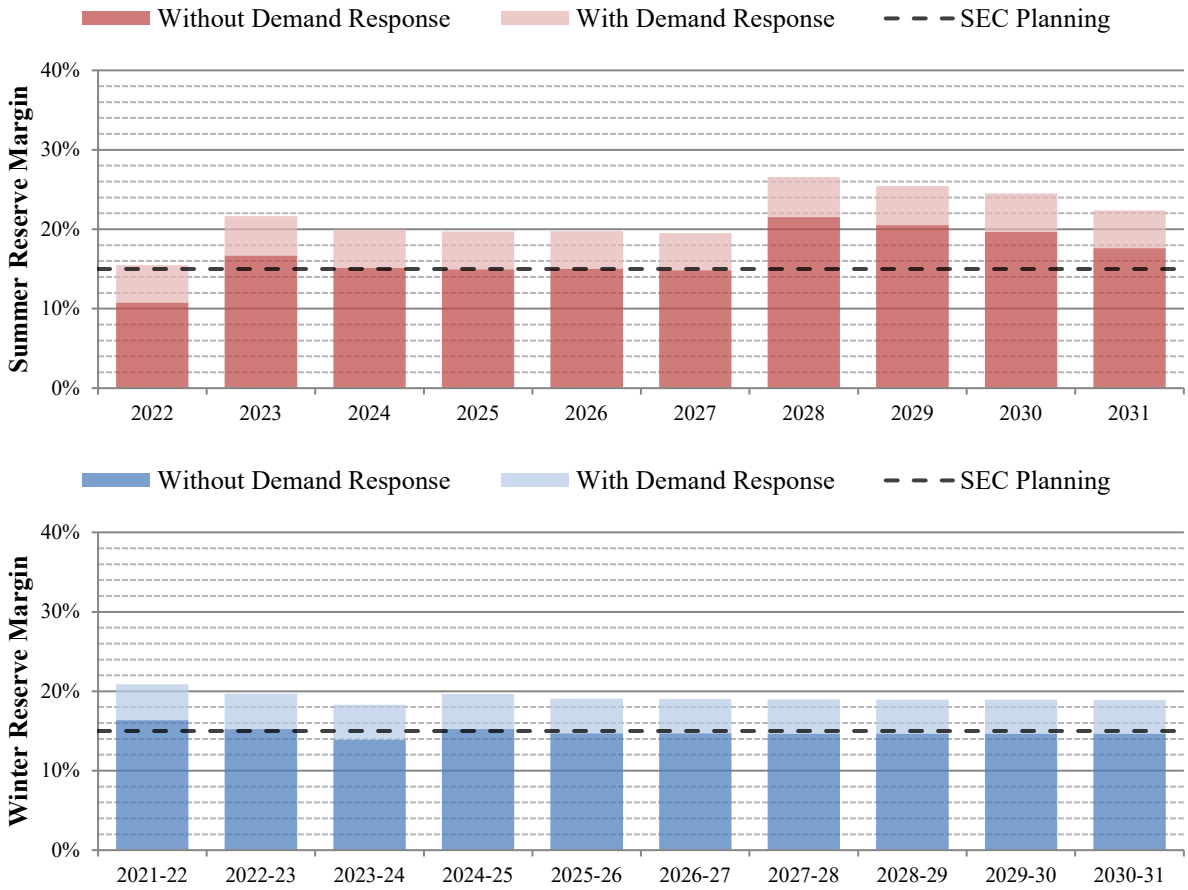
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	4,180	**26.9%**	14,673	**82.8%**
Coal	6,508	**41.9%**	1,637	**9.2%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	21	**0.1%**	4	**0.0%**
Renewable	489	**3.1%**	766	**4.3%**
Interchange	4,343	**27.9%**	631	**3.6%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**15,541**		**17,711**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

SEC utilizes a 15 percent planning reserve margin criterion for seasonal peak demand. Figure 45 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 45: SEC Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

SEC plans to retire one unit and add two units during the planning period, as described in Table 30. On December 21, 2017, SEC filed a need determination with the Commission for the Seminole CC Facility which was granted on May 25, 2018.[17] SEC plans on retiring one of its coal-fired SGS units at the end of 2022; but, has not yet selected the generator. In addition, SEC plans to add two natural gas-fired generating resources, a combined cycle and combustion turbine, during the planning period. SEC considers these as proxy units to meet its reliability criteria due to ending PPA contracts. SEC anticipates an additional 300 MW of solar generation through PPAs to become commercially operational by the end of 2023.

[17] 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 30: SEC Generation Resource Changes

Year	Plant Name & Unit Number	Unit Type	Net Capacity (MW) Sum	Notes
Retiring Units				
2022	SGS Unit 1 or 2	BIT – ST	626	Unit choice for retirement pending.
Total Retirements			**626**	
New Units				
2022	Seminole CC Facility	NG – CC	1,099	Docket No. 20170266-EC
2025	Unnamed CC	NG – CC	571	
2027	Unnamed CT	NG – CT	317	
Total New Units			**1,987**	
Net Additions			**1,361**	

Source: 2022 Ten-Year Site Plan

City of Tallahassee Utilities (TAL)

TAL is a municipal utility and the second smallest electric utility that 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 2022 Ten-Year Site Plan suitable for planning purposes.

Load & Energy Forecasts

In 2021, TAL had approximately 125,901 customers and annual retail energy sales of 2,590 GWh or approximately 1.1 percent of Florida's annual retail energy sales. Figure 46 illustrates the utility's historic and forecasted growth rates in customers and retail energy sales beginning in 2012. Over the last 10 years, TAL's customer base has increased by 9.55 percent, while retail sales have increased by 0.13 percent.

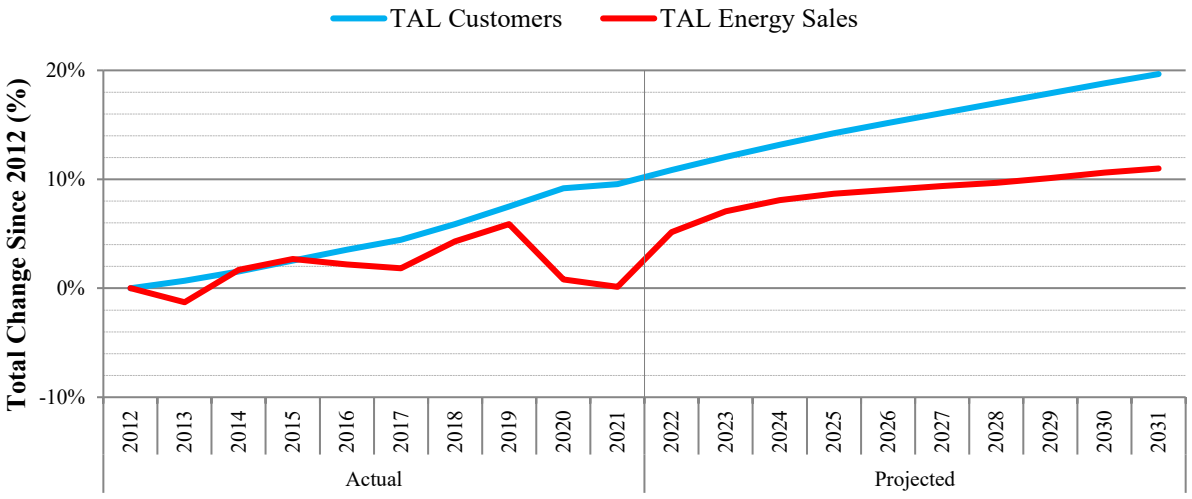
TAL's customer base consists of residential and commercial classes; and, the total energy consumption associated with the commercial class is higher than that associated with the residential class. Over the last decade, the utility's customer count growth has been robust. This growth correlates well to the rate of change in Leon County's population, household formation, and economic activity; such as, the increased rates of household counts, total employment and average real income per household. As a result of the expected continuation of favorable economic conditions in Leon County, TAL expects a continued strong growth in its customer counts.

The utility's residential electricity use per customer has been flattening after several years of decline. This is believed to be driven primarily from end-use efficiency standards that have been filtering into the stock of equipment through replacements and new builds. These end-use efficiency standards are believed to be nearly fully diffused into the current residential stock. Commercial energy use per customer has continued to decline it has been particularly impacted since early 2020 by COVID-19, from which certain large loads are still recovering.

TAL's load forecast reflects the continued impacts of energy efficiency standards and codes, as well as the utility's DSM and conservation/energy efficiency programs. These impacts are slightly offset by upward pressure on total residential consumption from increasing incomes, electric vehicle adoption, and other factors, resulting in essentially flat residential sales growth over the forecast horizon.

Over the current forecast horizon, TAL is projecting an average annual growth of 0.85 percent in its total customer counts, and a growth rate of 0.60 percent in its annual retail energy sales.

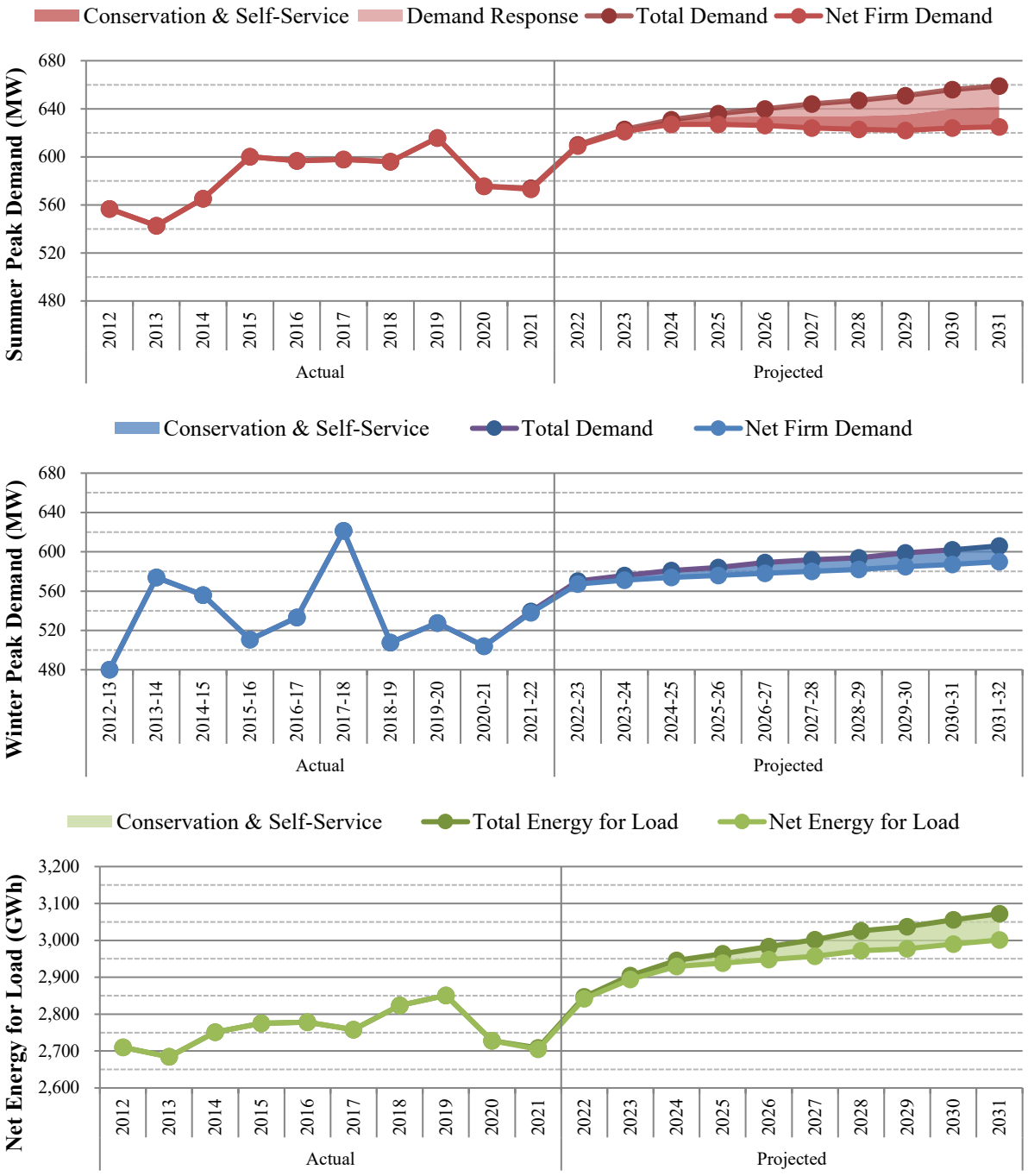
Figure 46: TAL Growth



Source: 2022 Ten-Year Site Plan

The three graphs in Figure 47 shows TAL's seasonal peak demand and net energy for load for the historic years of 2012 through 2021 and forecast years 2022 through 2031. 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 47: TAL Demand and Energy Forecasts



Source: 2022 Ten-Year Site Plan and Data Responses

Fuel Diversity

Table 31 shows TAL's actual net energy for load by fuel type as of 2021 and the projected fuel mix for 2031. 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. TAL projects it will continue to be a net exporter of energy, primarily of off-peak power during shoulder months due to its generation's operating characteristics.

Table 31: TAL Energy Generation by Fuel Type

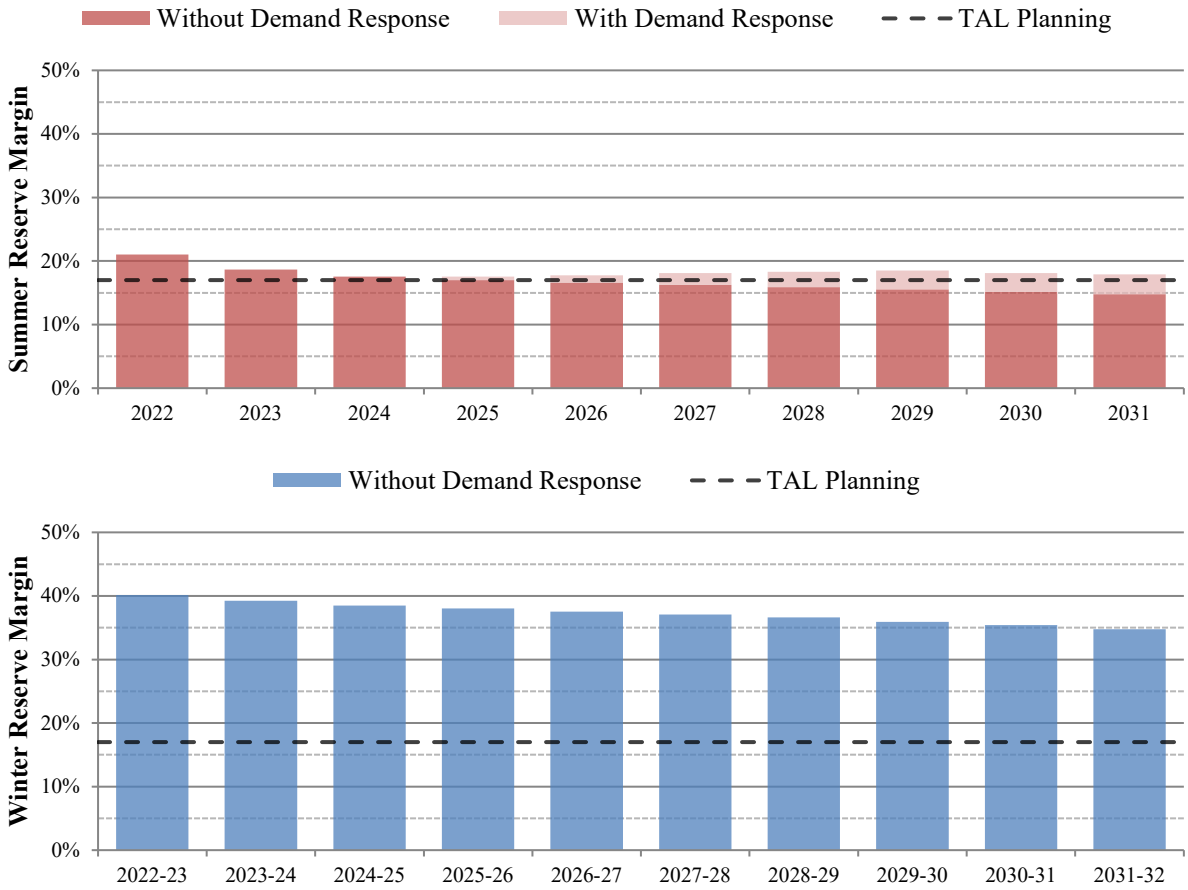
Fuel Type	Net Energy for Load			
	2021		2031	
	GWh	%	GWh	%
Natural Gas	2666	**97.7%**	3,021	**101.2%**
Coal	0	**0.0%**	0	**0.0%**
Nuclear	0	**0.0%**	0	**0.0%**
Oil	1	**0.0%**	0	**0.0%**
Renewable	113	**4.1%**	116	**3.9%**
Interchange	-51	**-1.9%**	(153)	**-5.1%**
NUG & Other	0	**0.0%**	0	**0.0%**
Total	**2,729**		**2,985**	

Source: 2022 Ten-Year Site Plan and Data Responses

Reliability Requirements

TAL utilizes a 17 percent planning reserve margin criterion for seasonal peak demand. Figure 48 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 48: TAL Reserve Margin Forecast



Source: 2022 Ten-Year Site Plan

Generation Resources

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

APPENDIX A

REVIEW OF THE

2022 TEN-YEAR SITE PLANS

OF FLORIDA'S ELECTRIC UTILITIES

OCTOBER 2022

Ten-Year Site Plan Comments

State Agencies

Regional Planning Councils

Local Governments

Environmental Groups

Nonprofit Agency

***Additional comments from Florida citizens are available in the 20220000-OT (Undocketed filings for 2022)**

State Agencies

Department of Environmental Protection

From: Senn, Nate
To: Donald Phillips
Cc: SCO
Subject: 2022 Ten-Year Site Plans
Date: Thursday, August 04, 2022 4:46:07 PM

Good day,

The Department of Environmental Protection Siting Coordination Office has reviewed the 2022 Ten-Year Site Plans from Florida's Electric Utilities and found the documents to be suitable for planning purposes.

Best Regards,

Nate Senn
Florida Department of Environmental Protection
DARM/Siting Coordination Office
Environmental Specialist
Nate.Senn@FloridaDEP.gov
Office: 850-717-9111

State Agencies

Department of Transportation

From: Overton, Patrick
To: Patti Zellner
Cc: Donald Phillips; Phillip Ellis
Subject: RE: DN 20220000-OT - Review of the Ten-Year Site Plans - Comment Request (007)
Date: Saturday, August 13, 2022 2:11:04 PM
Attachments: image001.png

Good afternoon Patti,

I do not have any comments on the below mentioned site plans.

Thanks,

Patrick Overton, P.E., FCCM

Florida Department of Transportation
State Utility Engineer
605 Suwannee Street, MS 75
Tallahassee, Florida 32399
Office# (850) 414-4379
Utilities (fdot.gov)

From: Patti Zellner <PZELLNER@PSC.STATE.FL.US>
Sent: Tuesday, May 17, 2022 3:40 PM
To: Overton, Patrick <Patrick.Overton@dot.state.fl.us>
Cc: Donald Phillips <DPhillip@psc.state.fl.us>; Phillip Ellis <PEllis@PSC.STATE.FL.US>; Patti Zellner <PZELLNER@PSC.STATE.FL.US>
Subject: DN 20220000-OT - Review of the Ten-Year Site Plans - Comment Request (007)

Dear Mr. Overton,
Please find attached your copy of the 2022 Ten-Year Site Plans – Comment Request letter dated May 17, 2022, 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

Florida Fish and Wildlife Conservation Commission

Commissioners
Rodney Barreto
Chairman
Coral Gables

Steven Hudson
Fort Lauderdale

Gary Lester
Oxford

Albert Maury
Coral Gables

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Robert A. Spottswood
Key West

Office of the
Executive Director
Eric Sutton
Executive Director

Thomas H. Eason, Ph.D.
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

850-487-3796
850-921-5786 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

August 5, 2022

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

RE: Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips:

Florida Fish and Wildlife Conservation Commission (FWC) staff reviewed the 2022 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. For specific technical questions about this year's reviews, please call Josh Cucinella at (352) 620-7330.

Sincerely,

Jason Hight, Director
Office of Conservation Planning Services

jh/jc
2022 Ten-Year Site Plans_49021_08052022

Regional Planning Council

Northeast Florida Regional Counsel

August 2, 2022

Donald Phillips, Engineering Specialist
Division of Engineering
Public Service Commission
2540 Shumard Oak BLVD.
Tallahassee, FL 32399

RE: **Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities**

Dear Mr. Phillips:

The Northeast Florida Regional Council has reviewed the copies of the relevant ten-year site plans for the Region.

There are many commendable practices included:

- The Florida Power and Light Company (FPL), in response to the 2021 extreme winter events in Texas, examined their generation, transmission, distribution, and fuel delivery systems to an extreme winter weather event. This included the development of a forecasting approach, including a hybrid-type forecast with an extreme winter peak load for the month of January. FPL has also began taking steps in 2021 to enhance winterization of FPL's nuclear and fossil-fuel generating units and enhanced cooperation and preparation between FPL and suppliers of natural gas and backup distillate fuel oil.

- The inclusion of existing and new sites within the Region for further development of solar generation, i.e., the Anhinga Solar Energy Center and Terrill Creek Solar Energy Center in Clay County, the Thomas Creek Solar Energy Center in Nassau County, and the Etonia Creek Solar Energy Center in Putnam County.

- The inclusion of potential solar facility sites for future generation and storage to meet the energy needs of the Region, such as the Nature Trail Solar Energy Center and the Cedar Trail Solar Energy Center in Baker County, the Rayland Solar Energy Center in Nassau County, and Georges Lakes Solar Energy Center in Putnam County. Currently, permits are presently considered to be obtainable for each of these sites.

After a careful review of the relevant 2022 Ten-Year Site Plans for both Florida Power and Light/Gulf Power Company and Seminole Electric Cooperative Inc, the Northeast Florida Regional Council finds that there are no adverse regional impacts and supports the adoption of the relevant 2022 Ten-Year Site Plans.

Regards,

Elizabeth Payne, AICP
Chief Executive Officer

Treasure Coast Regional Planning Council

TREASURE COAST REGIONAL PLANNING COUNCIL

INDIAN RIVER – ST. LUCIE – MARTIN – PALM BEACH

July 19, 2022

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

Subject: Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips:

The Treasure Coast Regional Planning Council has reviewed the 2022 Ten-Year Site Plans for Florida Power & Light (FPL) Company and Florida Municipal Power Agency (FMPA). Council approved the comments in the attached reports at their board meeting on July 15, 2022.

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, FMPA, 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

Attachments

cc: William P. Cox, FPL
Navid Nowakhtar, FMPA

FPL Ten-Year Power Plant Site Plan (2022-2031)

Treasure Coast Regional Planning Council Comments

TREASURE COAST REGIONAL PLANNING COUNCIL

MEMORANDUM

To: Council Members AGENDA ITEM 5

From: Staff

Date: July 8, 2022

Subject: Florida Power & Light Ten-Year Power Plant Site Plan (2022-2031) and Update

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 that Council review the most recent ten-year site plan prepared by FPL and provide comments to the FPSC on or before August 5, 2022.

This plan addresses FPL generating power additions and retirements for the years 2022 through 2031 including the service area of the former Gulf Power Company.

Effective January 1, 2022, Gulf Power was merged into FPL for ratemaking purposes. As a result, the two utility systems are now legally a single electric utility system. However, the two systems will continue to operate as two separate electric systems until completion of the new 161 kilovolt (kV) transmission line, the North Florida Resiliency Connection line, that is projected to be completed soon. At that point, FPL will operate as a single, integrated utility system.

In this year's Site Plan document, FPL made two significant changes to the analyses performed and information presented. The first pertains to changes FPL made to its Winter peak load forecast, which will help FPL be better prepared for an extreme Winter event. Second is FPL's resource planning consideration for potential new Federal tax credits for batteries, solar, and hydrogen investment that were contained in the proposed Build Back Better America legislation. Though it did not pass in 2021, the current Federal Administration continues to push for more aggressive moves towards zero-emission, renewable energy sources that reduce carbon footprint. FPL has developed multiple resource planning options to react to legislation that may be passed in the future.

Marshall Critchfield, FPL's Senior External Affairs Advisor for the Treasure Coast will provide a presentation on the plan and FPL's recent activities.

Analysis

The attached report summarizes FPL plans for future power generation and provides comments for transmittal to the FPSC. The report concludes that FPL continues to plan for increasing demand over the planning period. They will primarily meet that demand with continued heavy dependence on fossil and nuclear fuels, but also concentrate on a rapid increase in renewable sources, primarily solar generating capacity. In fact, FPL projects to produce approximately 38% of total electricity from zero-emission, renewable sources (20% nuclear, 18% solar) by the end of the planning period; up from the approximate 28% today (23% nuclear, 5% solar).

Council supports FPL's and the State's continued focus to develop new programs to: 1) reduce 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 – July 15, 2022

Commissioner Smith from Martin County moved approval of the staff report. Mayor Reed from the City of Palm Beach Gardens seconded the motion, which carried unanimously.

Attachment

TREASURE COAST REGIONAL PLANNING COUNCIL

Report on the

Florida Power & Light Company
Ten Year Power Plant Site Plan 2022-2031

July 15, 2022

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 and provide comments to the FPSC on or before August 5, 2022.

Summary of the Plan

The plan indicates combined total summer peak demand projected growth of 13.2% over the 10-year period; from 27,310 megawatts (MW) in 2022 to 30,924 MW in 2031. 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. FPLs combined DSM savings are expected to grow by 17.0% over the reporting period; from 1,827 MW in 2022 to 2,138 MW in 2031 (see Exhibit 1, Schedule 7.1).

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.

Major changes in generating capacity are as follows:

FPL system area:

- 2021 through 2026 - capacity upgrades of existing combined cycle units;
- January 2022 - retirement of FPL's ownership portion of the Scherer 4 coal unit (approximately 630 MW);
- In 2022 – Addition of cost-effective natural gas fueled generation - FPL's existing Lauderdale power plant site.
- 2022 through 2031 - new solar (PV) additions of approximately 9,462 MW;
- Late 2023 – pilot projected that will result in hydrogen replacing a portion of the natural gas that is being used to fuel the exiting Okeechobee Combined Cycle unit; and
- By January 2024 – The retirement of FPL's ownership portion of coal-fueled Daniel Units 1 & 2 (approximately 500 MW);
- By 2026 – enhancements of existing generating units;

- By the end of 2028 – Coal fueled Scherer 3 plant (located in Georgia) will be retired (approximately 215 MW);
- By 2031 – an additional 3,200 MW of battery storage facilities will be installed throughout FPL's service area;

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 has identified thirty-seven "preferred sites" for future power generating facilities. The following are in the Treasure Coast Region (Exhibit 2)

1. Pink Trail Solar Energy Center, St. Lucie County: The proposed 438-acre site is located at 8759 Carlton Road, Port St. Lucie, FL 34987.
2. Bluefield Preserve Solar Energy Center, St. Lucie County: The proposed 440-acre site is located at 14697 E. Center Street, Okeechobee, FL 34974.
3. Silver Palm Solar Energy Center, Palm Beach County: Proposed 640-acre site. Location to be determined -- an address has not yet been assigned by the County.
4. Turnpike Solar Energy Center, Indian River County: The proposed 571-acre site is located at 16205 17th Street SW, Vero Beach, FL 32968.
5. Monarch Solar Energy Center, Martin County: Proposed 551-acre site. Location to be determined -- an address has not yet been assigned by the County.
6. White Tail Solar Energy Center, Martin County: Proposed 601-acre site. Location to be determined -- an address has not yet been assigned by the County.
7. Pineapple Solar Energy Center, St. Lucie County: Proposed 428-acre site. Location to be determined -- an address has not yet been assigned by the County.

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 twenty-two "potential sites" for future generation and storage facilities, though potential sites do not represent a commitment by the utility to construct these new facilities. Four of these sites are currently planned to be in the Treasure Coast Region:

1. Fawn Solar Energy Center, Martin County
2. Holopaw Solar Energy Center, Palm Beach County
3. Buttonwood Solar Energy Center, St. Lucie County
4. Orchard Solar Energy Center, St. Lucie/Indian River County

Other Factors

The FPL 2022-2031 plan describes eight factors that have influenced or may influence this resource plan. They are summarized below:

1. The critical need to maintain a balance between load and generating capacity in specific regions of FPL's service area, such as in Southeastern Florida (Miami-Dade and Broward counties).

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.

4. The impact of 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 trend of declining fuel costs for FPL's fossil-fueled generation fleet.

6. Projected changes in CO_2 regulation and associated compliance costs.

7. Cost uncertainty regarding future solar and battery additions.

8. Projected increases in electric vehicle (EV) adoption.

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 3 Schedule 6.2); accounting for 71.2% (1.4% from coal and 69.8% from natural gas) of FPL's electric generation in 2022. The plan predicts fossil fuels will account for 60.5% (0.0% from coal and 60.5% from natural gas) of FPL electric generation in 2031. During the same period, nuclear sources are predicted to drop from 21.1% in 2022 to 19.3% in 2031, 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 5.8% in 2022 to 18.7% in 2031.

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.

1. **Universal Solar**: This plan shows a significant increase in utility-scale solar throughout the 10-year period. Approximately 9,462 MW of PV generation is projected to be added in the 2022 through 2031 time period. When combined with the current 3,164 MW of solar PV already installed, projected solar PV climbs to 12,626 MW for the integrated utility by the end

of 2031. 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. However, FPL projects that it will reach this goal by 2025, five years ahead of schedule.

2. **Distributed PV Pilot Programs**: FPL began implementation of two distributed PV pilot programs in 2015.

   a. Customer-Focused Voluntary PV Pilot Programs: 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. As of the end of 2021, there were 48,833 participants enrolled in the program with 78 projects located in 36 communities within the FPL service territory. These projects represent approximately 2,528 kW-DC of PV generation. This program will sunset on December 31, 2025.

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

3. **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, the program added 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. As of June 2021, all twenty approved solar sites under this program were complete and operational.

   FPL received approval to extend the FPL SolarTogether program through the construction of an additional 1,788 MW of cost-effective solar through 2025. The capacity will be allocated 40% to residential and small business customers with a carve out of 45 MW to low-income participants. The remaining 60% is allocated to commercial, industrial, and governmental customers.

4. **Solar Power Facilities Pilot Program:** FPL received approval to offer a four-year voluntary pilot program to commercial and industrial customers that may elect to have FPL install and maintain a solar facility on their site for a monthly tariff charge (the "Solar Power Facilities Pilot Program"). The output of this solar facility would be used solely by the participating customer. The tariff is for a ten-year term and the monthly fixed charge will recover the project capital costs and ongoing operating expenses from the program participants, such that the general body of customers will not be impacted.

Battery Storage:

A 409 MW battery storage facility was added in 2021 at the existing Manatee plant site and two 30 MW battery storage units were added in 2021; one at the existing Sunshine Gateway Solar Energy Center and another at the Echo River Solar Energy Center. Approximately 3,200 MW of battery storage facilities will be installed by 2031, which results in a total of 3,669 MW.

Electric Vehicle Efforts:

Florida continues to rank in the top three states nationally for electric vehicle (EV) adoption, and more Floridians are buying EVs every year. FPL began implementing the 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 is being conducted in partnership with interested host customers over an approximate 3-year period. Installations encompass different EV charging technologies and market segments, including level 2 workplace charging at public and/or private workplaces; destination charging at well-attended locations; residential charging at customers' homes; and fast charging in high-traffic areas, along highway corridors and evacuation routes to enable long distance travel. These places 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, 2021, FPL EVolution has installed 599 ports across 153 site locations.

Conclusions and Recommendations

Recent dramatic spikes and volatility in the oil and gas markets and threats to supply confirms the value of moving as quickly as possible towards a more balanced fuels portfolio, with continued emphasis on increasing renewable energy sources. Council supports this approach to reduce vulnerability to fuel price increases and supply interruptions and 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 applauds FPL's push to reach its "30-by-30" solar panel goal 5 years early in 2025. FPL should consider developing other programs to install, own, and operate PV units on the rooftops of private and public buildings. One reason to shift to rooftop PV systems distributed throughout the area of demand is that it reduces reliance on large transmission lines and reduces 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. Additionally, the incentive for owners of buildings to participate in this strategy is to offer reduced rates 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. 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 increase conservation measures and to rely, to a greater extent, on renewable energy sources. State legislators should amend the regulatory framework to provide financial incentives for power providers and customers. 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

Recommended Plan
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	Firm 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
2022	30,908	1,125	0	4	32,037	27,310	1,827	25,483	6,555	25.7	0	6,555	25.7	4,728	17.3
2023	31,532	240	0	4	31,775	27,735	1,872	25,863	5,913	22.9	0	5,913	22.9	4,041	14.6
2024	31,892	240	0	4	32,136	28,136	1,920	26,216	5,920	22.6	0	5,920	22.6	4,000	14.2
2025	32,345	240	0	4	32,589	28,419	1,953	26,466	6,123	23.1	0	6,123	23.1	4,170	14.7
2026	32,502	240	0	4	32,746	28,800	1,977	26,823	5,922	22.1	0	5,922	22.1	3,945	13.7
2027	32,945	240	0	0	33,185	29,103	2,004	27,099	6,086	22.5	0	6,086	22.5	4,082	14.0
2028	33,486	240	0	0	33,726	29,476	2,035	27,441	6,285	22.9	0	6,285	22.9	4,250	14.4
2029	34,084	239	0	0	34,324	29,986	2,069	27,917	6,406	22.9	0	6,406	22.9	4,337	14.5
2030	34,499	239	0	0	34,739	30,485	2,103	28,382	6,357	22.4	0	6,357	22.4	4,254	14.0
2031	35,044	239	0	0	35,283	30,924	2,138	28,786	6,497	22.6	0	6,497	22.6	4,359	14.1

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 2022 load forecast without incremental DSM or cumulative load management.
Col.(8) represents cumulative load management capability, plus incremental conservation and load management, from 9/2021-on intended for use with the 2022 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)

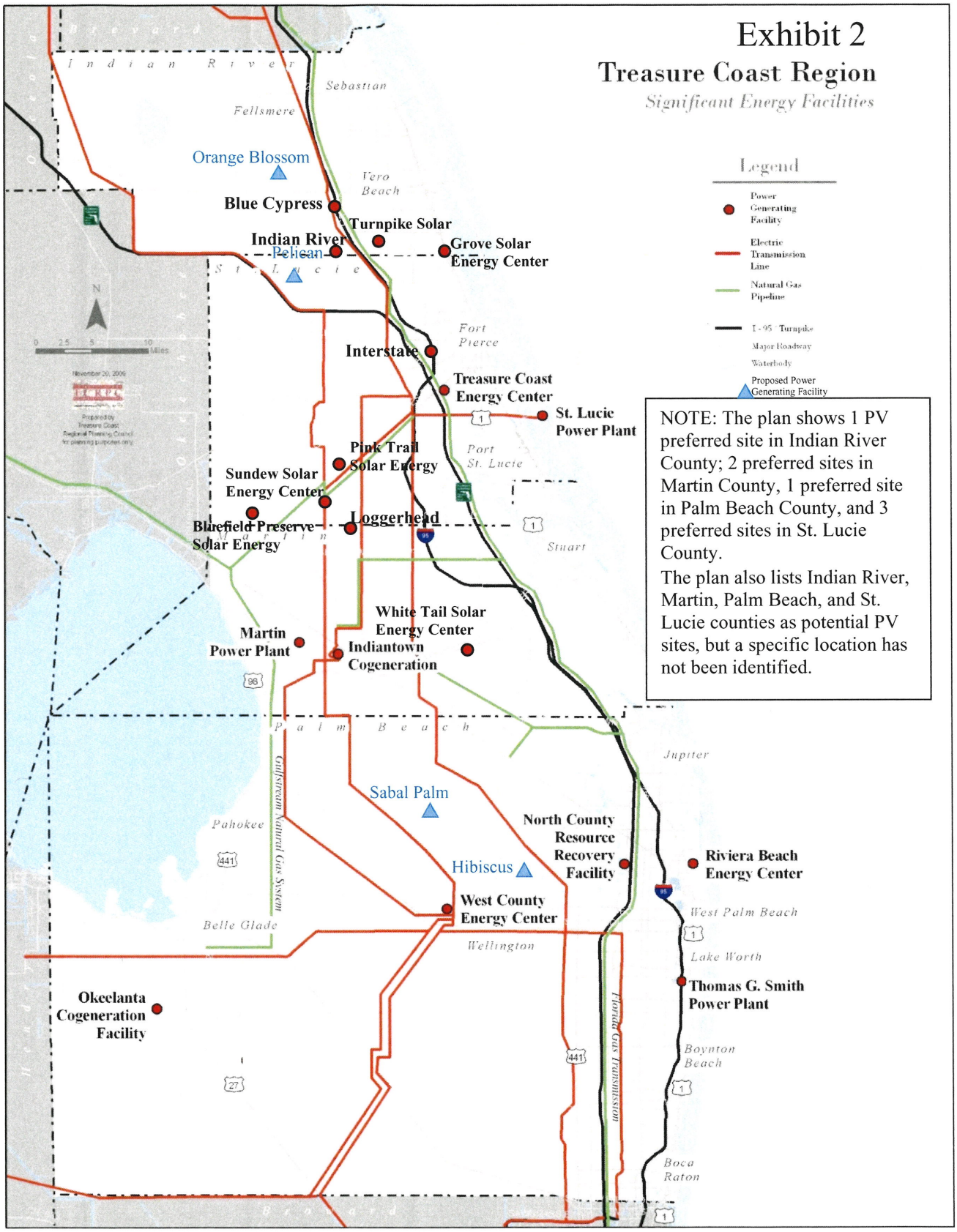


Exhibit 2
Treasure Coast Region
Significant Energy Facilities
Legend
Power Generating Facility
Electric Transmission Line
Natural Gas Pipeline
I-95 Turnpike
Major Roadway
Waterbody
Proposed Power Generating Facility
NOTE: The plan shows 1 PV preferred site in Indian River County; 2 preferred sites in Martin County, 1 preferred site in Palm Beach County, and 3 preferred sites in St. Lucie County.
The plan also lists Indian River, Martin, Palm Beach, and St. Lucie counties as potential PV sites, but a specific location has not been identified.
Orange Blossom
Blue Cypress
Indian River
Pelican
Turnpike Solar
Grove Solar Energy Center
Interstate
Treasure Coast Energy Center
St. Lucie Power Plant
Pink Trail Solar Energy
Sundew Solar Energy Center
Bluefield Preserve Solar Energy
Loggerhead
White Tail Solar Energy Center
Martin Power Plant
Indiantown Cogeneration
Sabal Palm
Hibiscus
North County Resource Recovery Facility
Riviera Beach Energy Center
West County Energy Center
Thomas G. Smith Power Plant
Okeelanta Cogeneration Facility
Gulfstream Natural Gas System
Florida Gas Transmission
Indian River
Sebastian
Fellsmere
Vero Beach
Fort Pierce
Port St. Lucie
Stuart
Jupiter
Pahokee
Belle Glade
Wellington
West Palm Beach
Lake Worth
Boynton Beach
Boca Raton

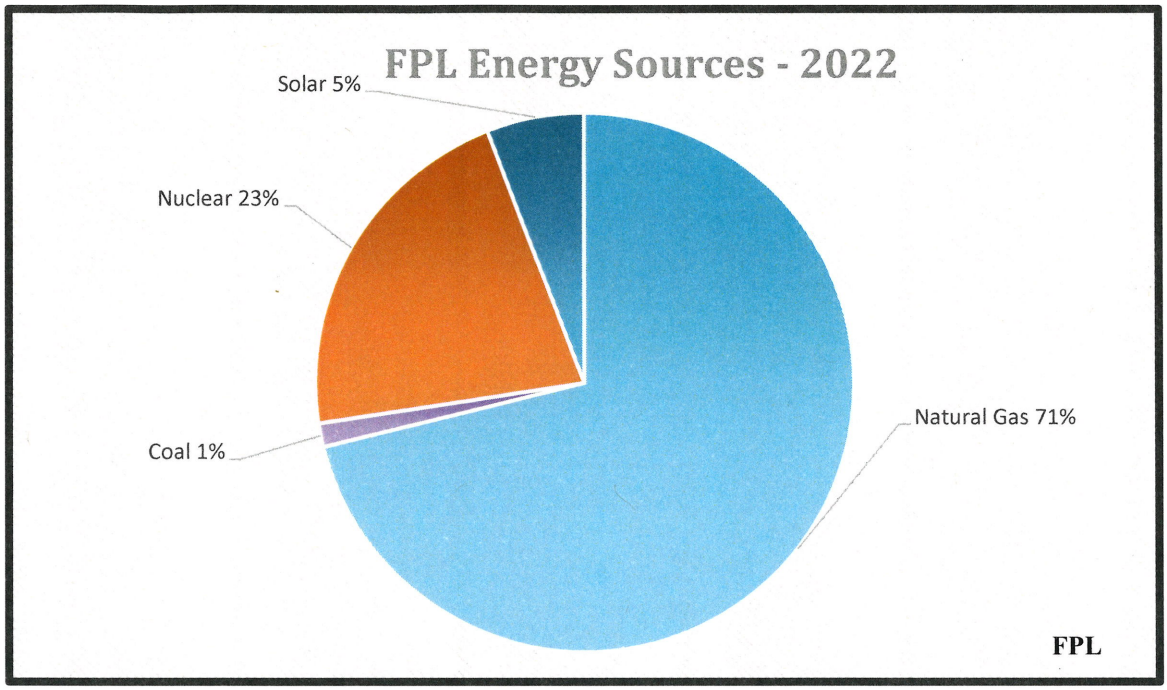
Exhibit 3

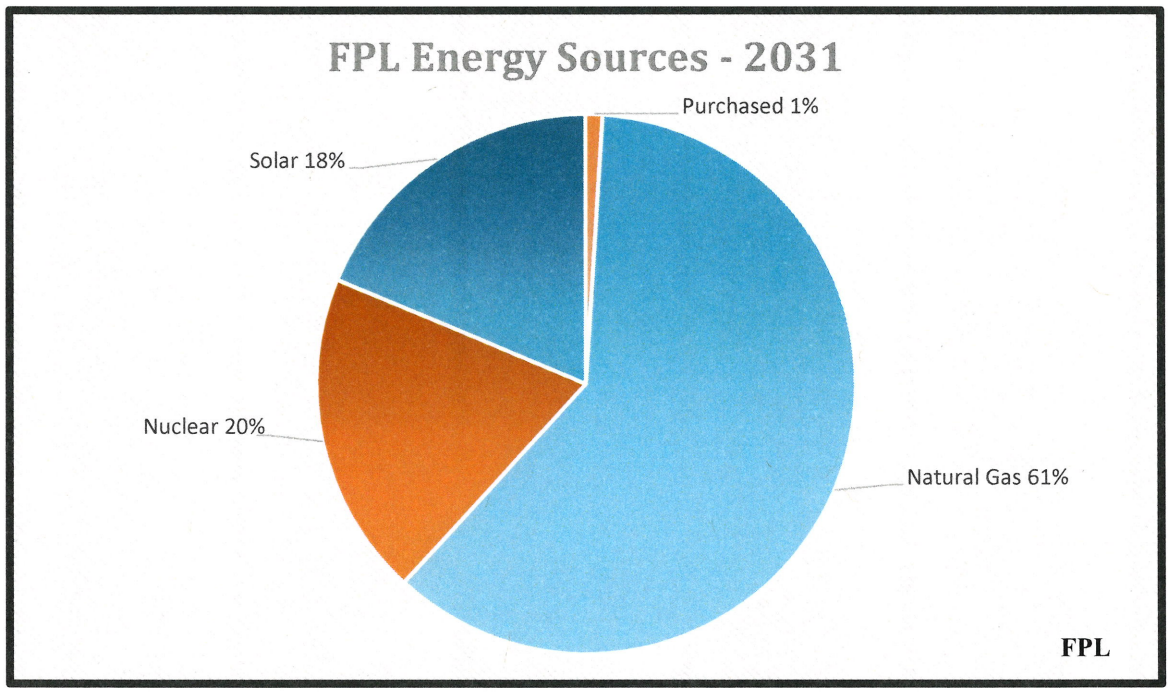
Business as Usual
Schedule 6.2 Forecasted
Energy Sources % by Fuel Type

	Energy Source	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
(1)	Annual Energy Interchange [1/]	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(2)	Nuclear	%	21.1	20.3	19.9	20.5	20.2	19.9	20.1	19.6	19.2	19.3
(3)	Coal	%	1.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(4)	Residual (FO6) - Total	%	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
(6)	Distillate (FO2) - Total	%	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
(8)	CC	%	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
(10)	Natural Gas - Total	%	69.8	69.9	68.2	65.2	64.5	64.0	62.8	62.3	61.6	60.5
(11)	Steam	%	0.0	0.4	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3
(12)	CC	%	66.4	68.2	67.6	64.8	64.0	63.3	62.3	61.8	61.2	60.1
(13)	CC PPAs - Gas	%	3.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(14)	CT	%	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1
(15)	Solar [2/]	%	5.8	7.5	10.0	12.4	13.5	14.3	15.3	16.4	17.5	18.6
(16)	PV	%	3.3	4.4	5.8	7.2	8.1	9.0	10.1	11.3	12.4	13.6
(17)	Solar Together [3/]	%	2.3	2.9	4.0	5.0	5.2	5.1	5.1	5.0	4.9	4.8
(18)	Solar Thermal	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(19)	Solar PPAs	%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
(20)	Wind PPAs	%	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
(21)	Other [4/]	%	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.9
			100	100	100	100	100	100	100	100	100	100

1/ Represents interchange between FPL and other utilities.
2/ Represents output from FPL's Solar PV, Solar Together, Solar Thermal, and Solar PPA facilities.
3/ The values shown represent energy produced from FPL-owned solar facilities that are part of FPL's SolarTogether (ST) program. Environmental attributes in the form of renewable energy certificates for that participant's allocation of the total energy produced are retired on the participant's behalf.
4/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, etc., net of Economy and other Power Sales.

Exhibit 4


FPL Energy Sources - 2022
Solar 5%
Nuclear 23%
Coal 1%
Natural Gas 71%
FPL


FPL Energy Sources - 2031
Purchased 1%
Solar 18%
Nuclear 20%
Natural Gas 61%
FPL

FMPA Ten-Year Power Plant Site Plan (2022-2031)

Treasure Coast Regional Planning Council Comments

TREASURE COAST REGIONAL PLANNING COUNCIL

MEMORANDUM

To: Council Members AGENDA ITEM 4B4

From: Staff

Date: July 8, 2022

Subject: Florida Municipal Power Agency Ten Year Power Plant Site Plan 2022-2031

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 that Council review the most recent ten-year site plan prepared by Florida Municipal Power Agency (FMPA) and provide comments to the FPSC on or before August 5, 2022.

This plan addresses FMPA generating power additions and retirements for the years 2022 through 2031, focused on the All-Requirements Power Supply Projects (ARP) whereby all the electrical power generating needs of member communities are met through FMPA.

The FMPA is a governmental wholesale power company owned by municipal electric utilities. It was created in 1978 to allow its original members to jointly own, operate, and manage electric power plants and currently has 31 members. The FMPA has responsibilities for power supply planning related to the ARP, where the agency has committed to supplying all of the power requirements of 13 cities. Two of the FMPA's members are in the Treasure Coast Region, including Fort Pierce Utilities Authority and the City of Lake Worth Beach.

FMPA currently has six power supply projects that provide all the power needs of 13 cities and some of the power need for other cities. FMPA generates electricity using various fuel types, including natural gas, coal, nuclear and renewables.

The FMPA electric generation capabilities include: 1) nuclear capacity entitlements, 2) ARP-owned generation capacity, and 3) ARP member-owned generation capacity. Some of this generation occurs within the region. In 1983, the FMPA purchased an 8.8 percent ownership interest in FPL's St. Lucie Unit No. 2 nuclear generating unit. This project is known as the St. Lucie Project. Fourteen of the FMPA members, including the two members in the Treasure Coast Region, are participants in the St. Lucie Project.

Analysis

The attached report summarizes FMPA plans for future power generation and provides comments for transmittal to the FPSC. The report concludes that FMPA continues to plan for demand over the planning period. They will primarily meet that demand with continued heavy dependence on fossil and nuclear fuels, but also concentrate on a rapid increase in renewable sources, primarily solar generating capacity. In fact, FMPA projects to produce approximately 16.8% of total electricity from zero-emission, renewable sources (5.7% nuclear, 10.6% solar, 0.5% other) by the end of the planning period; up from the approximate 7.7% today (5.5% nuclear, 1.4% solar, 0.8% other).

Council supports FMPA's and the State's efforts to develop new programs to: 1) reduce reliance on fossil fuels as future energy sources, including retirement of coal facilities, 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 – July 15, 2022

Commissioner Smith from Martin County moved approval of the staff report. Commissioner Adams from Indian River County seconded the motion, which carried unanimously.

Attachment

TREASURE COAST REGIONAL PLANNING COUNCIL

Report on the

Florida Municipal Power Agency
Ten Year Power Plant Site Plan 2022-2031

July 15, 2022

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 the Florida Municipal Power Agency (FMPA) and provide comments to the FPSC on or before August 5, 2022.

Summary of the Plan

The FMPA is a governmental wholesale power company owned by municipal electric utilities. It was created in 1978 to allow its original members to jointly own, operate, and manage electric power plants and currently has 31 members. The FMPA has responsibilities for power supply planning related to the ARP, where the agency has committed to supplying all of the power requirements of 13 cities. Two of the FMPA's members are in the Treasure Coast Region, including Fort Pierce Utilities Authority and the City of Lake Worth Beach.

FMPA currently has six power supply projects that provide all the power needs of 13 cities and some of the power need for other cities. FMPA generates electricity using various fuel types, including natural gas, coal, nuclear and renewables.

The FMPA electric generation capabilities include: 1) nuclear capacity entitlements, 2) ARP-owned generation capacity, and 3) ARP member-owned generation capacity. Some of this generation occurs within the region. In 1983, the FMPA purchased an 8.8 percent ownership interest in FPL's St. Lucie Unit No. 2 nuclear generating unit. This project is known as the St. Lucie Project. Fourteen of the FMPA members, including the two members in the Treasure Coast Region, are participants in the St. Lucie Project.

The total summer capacity of ARP resources for 2022 is 1,745 MW and 1,655 MW for 2031, comprised of ARP member-owned resources, ARP shares in nuclear, coal, and gas-fired plants, and power purchase agreements. Demand within ARP in 2022 is 1,509 MW, reducing to 1,439 MW in 2031 with reductions driven by changes in how much ARP produced power is made available for resale.

The current plan makes primary electricity gains through peaking purchase, which could be comprised of solar, energy storage, offsets from load management, and reserve capacity. FMPA

anticipates ceasing to burn coal after 2027 as one jointly owned coal unit retires in 2025 and the other is converted to natural gas in 2027. There are no new generating facilities proposed with ARP member owned systems.

Evaluation

The ten-year site plan indicates that fossil fuels will be the primary source of energy used by FMPA to generate electricity during the next 10 years (see Exhibit 3 Schedule 6.2); accounting for 92.2% (16.2% from coal and 76.0% from natural gas) of FMPA's electric generation in 2022. The plan predicts fossil fuels will account for 83.2% (0.0% from coal and 83.2% from natural gas) of FMPA electric generation in 2031. During the same period, nuclear sources are predicted to increase from 5.5% in 2022 to 5.7% in 2031. Solar sources are predicted to dramatically increase from 1.4% in 2022 to 10.6% in 2031.

Renewable Energy

FMPA is actively involved in planning and developing new renewable energy resources. Currently, the ARP purchases power from a sugar bagasse fueled cogeneration plant and uses landfill gas to supplement coal fuel requirements. The ARP has member-owned photovoltaic solar generating capacity and 20-year power purchase agreement solar capacity which will dramatically increase the share of electricity generated through renewable sources.

Conclusions and Recommendations

Recent dramatic spikes and volatility in the oil and gas markets and threats to supply confirms the value of moving as quickly as possible towards a more balanced fuels portfolio, with continued emphasis on increasing renewable energy sources. Council supports this approach to reduce vulnerability to fuel price increases and supply interruptions and 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 applauds FMPA's plan to reduce reliance on coal and replace it with solar power. To enhance these efforts, FMPA 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. 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 FMPA and the State of Florida to continue developing new programs to increase conservation measures and to rely, to a greater extent, on renewable energy sources. State legislators should amend the regulatory framework to provide financial incentives for power providers and customers. 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
All-Requirements Power Supply Project

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
							Reserve Margin before Maintenance			Reserve Margin after Maintenance	
Year	Total Installed Capacity (MW) [1]	Firm Capacity Import (MW)	Firm Capacity Export (MW)	QF (MW)	Total Available Capacity (MW)	System Firm Summer Peak Demand [2] (MW)	(MW)	(% of Peak)	Scheduled Maintenance (MW)	(MW)	(% of Peak)
2022	1,486	260	0	0	1,745	1,509	236	16%	0	236	16%
2023	1,496	260	0	0	1,755	1,508	247	16%	0	247	16%
2024	1,496	204	0	0	1,700	1,450	250	17%	0	250	17%
2025	1,380	315	0	0	1,695	1,474	221	15%	0	221	15%
2026	1,418	294	0	0	1,712	1,489	223	15%	0	223	15%
2027	1,418	296	0	0	1,713	1,490	223	15%	0	223	15%
2028	1,417	210	0	0	1,627	1,415	212	15%	0	212	15%
2029	1,417	224	0	0	1,641	1,427	214	15%	0	214	15%
2030	1,416	226	0	0	1,642	1,428	214	15%	0	214	15%
2031	1,416	239	0	0	1,655	1,439	216	15%	0	216	15%

[1] See Table 5-1 for a listing of the resources identified as Installed Capacity and Firm Capacity Import.

[2] System Firm Summer Peak Demand includes transmission losses for the ARP Participants and additional ARP wholesale obligations served through FPL, DEF, and KUA.

Exhibit 2

Figure ES-1
ARP Participants and FMPA Power Supply Resource Locations

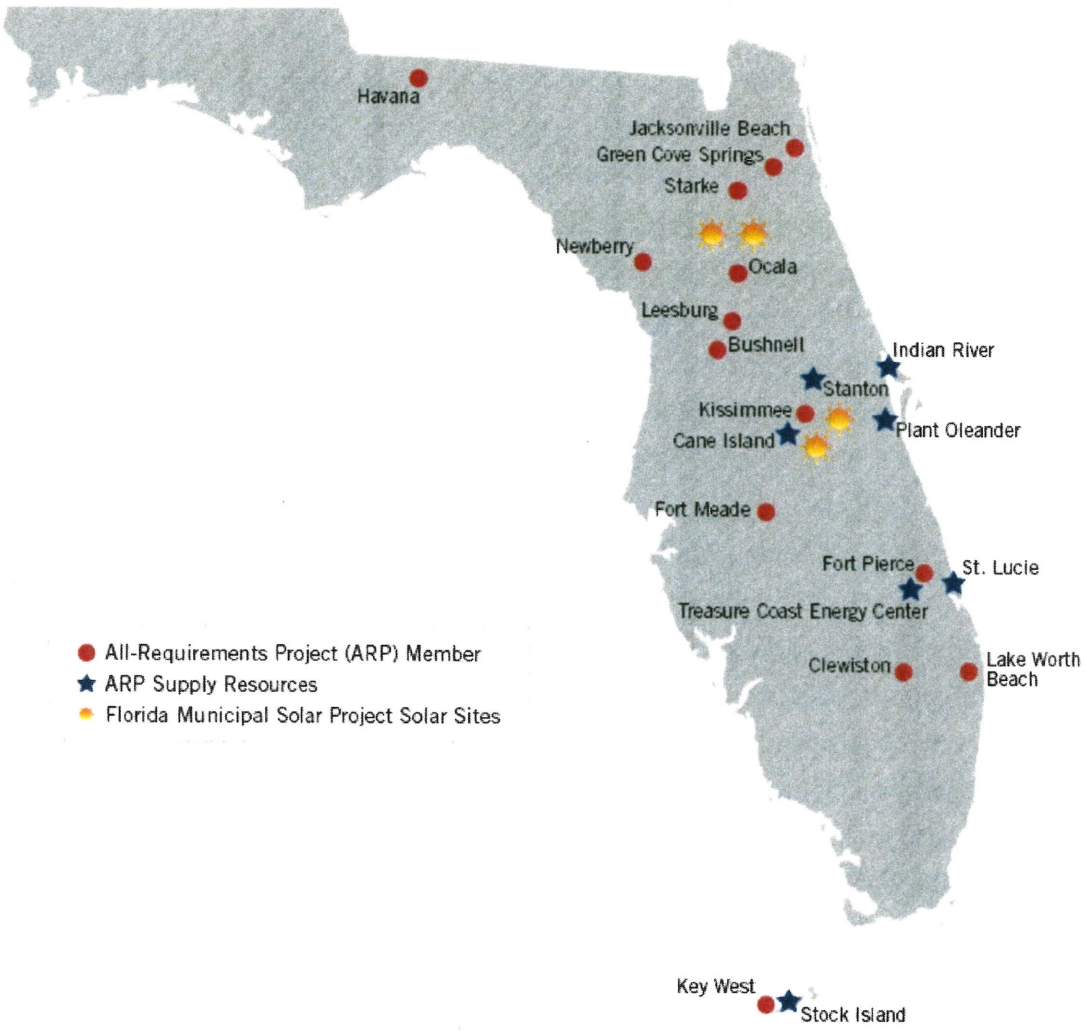


Exhibit 3

Schedule 6.2
Energy Sources (%) – All-Requirements Power Supply Project

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Line		Prime		Actual	Forecasted									
No.	Energy Source	Mover	Units	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	Annual Firm Inter-Region Interchange		%	-	-	-	-	-	-	-	-	-	-	-
2	Nuclear [1]		%	5.5%	5.6%	5.6%	5.7%	5.8%	5.7%	5.5%	6.0%	5.9%	5.5%	5.7%
3	Coal		%	16.2%	16.7%	15.4%	11.0%	6.4%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%
	Residual													
4		Steam	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
6		CT	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7		Total	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Distillate													
8		Steam	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10		CT	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11		Total	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Natural Gas													
12		Steam	%	1.2%	1.0%	0.9%	0.6%	0.4%	0.3%	3.7%	3.5%	3.8%	3.9%	3.8%
13		CC	%	74.0%	73.6%	75.0%	77.2%	79.4%	76.9%	78.0%	77.8%	77.6%	77.8%	77.7%
14		CT	%	0.8%	0.8%	0.7%	0.4%	1.2%	1.5%	1.9%	1.4%	1.4%	1.5%	1.7%
15		Total	%	76.0%	75.4%	76.7%	78.2%	81.0%	78.7%	83.6%	82.6%	82.8%	83.2%	83.2%
16	NUG		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Renewables													
17		Biofuels	%	0.6%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
18		Biomass	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
19		Geothermal	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20		Hyrdro	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
21		Landfill Gas	%	0.2%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
22		MSW	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
23		Solar	%	1.4%	1.6%	1.6%	4.5%	6.4%	10.4%	10.4%	10.9%	10.8%	10.7%	10.6%
24		Wind	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
25		Other	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
26		Total	%	2.2%	2.3%	2.2%	5.1%	6.9%	10.9%	10.9%	11.4%	11.3%	11.2%	11.1%
27	Interchange		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
28	Net Energy for Load		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

[1] Nuclear generation shown is the ARP Participants' Entitlement Shares in the St. Lucie Project.

Local Government

Mayor of Miami-Dade County

Iris Rollins

From: John Plescow
Sent: Monday, August 8, 2022 8:29 AM
To: Consumer Correspondence; Diane Hood
Subject: FW: To CLK Docket 20220000
Attachments: 08.05.22 Letter to Florida Public Service Commission Regarding FPL Ten Year Site Plan Docket 2022000.pdf

Importance: High

Please, add to docket 20220000.

From: Consumer Contact <Contact@PSC.STATE.FL.US>
Sent: Monday, August 08, 2022 8:08 AM
To: John Plescow <JPlescow@PSC.STATE.FL.US>
Cc: Angie Calhoun <ACalhoun@PSC.STATE.FL.US>
Subject: To CLK Docket 20220000
Importance: High

From: Murley, James (RER) <James.Murley@miamidade.gov>
Sent: Friday, August 05, 2022 4:26 PM
To: Consumer Contact <Contact@PSC.STATE.FL.US>
Cc: McCrackine, Sean (Office of the Mayor) <Sean.McCrackine@miamidade.gov>; Murley, James (RER) <James.Murley@miamidade.gov>
Subject: MDC Filing for Public Service Commission - FPL 2022 Ten Year Site Plan Comments
Importance: High

Dear Florida Public Service Commission Members:

The attached comments are being provided on behalf of Daniella Levine Cava, Mayor, Miami-Dade County.

Sincerely,

Jim Murley
Chief Resilience Officer
111 NW 1st Street, 12 Floor
Miami, Florida 33128
(O) 305-375-5593
(C) 786-719-9155

All Lobbyists must register with the Clerk of the Board prior to any meeting with County Personnel. Register online or in person at 111 NW 1st Street, 17th Floor, Miami, FL 33128. The Clerk's Office phone number is 305-375-5137. You can find more information on lobbying with Miami-Dade County here

August 5, 2022

Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee FL, 32399

Re: FPL Ten Year Site Plan Comments; Docket 2022000

Dear Chairman Fay, Commissioners Graham, La Rosa, Clark and Passidomo:

In April 2022, Florida Power and Light (FPL) published their 2022 edition of the Ten-Year Site Plan (TYSP). In this filing, FPL outlines its plan for the next ten years with regards to its electrical grid and the fuels that will be used to power it. The modest increases in solar and battery storage, and the continued reduction in coal over the ten-year timeline of the plan in the "Business as Usual Resource Plan" is insufficient to get Florida quickly on a path to a clean energy future. We are also glad to see that the originally proposed "Recommended Resource Plan," which used unverified methodologies to prepare for an unlikely extreme cold weather event, was withdrawn.

There are two developments relative to the 2022 TYSP that would like to bring to your attention. The first is the release of our Miami-Dade Climate Action Strategy in 2021. The Climate Action Strategy is an ambitious roadmap to drastically reduce our community's carbon pollution by committing to reduce our Community-Scale greenhouse gas (GHG) emissions by 50% from 2019 levels by 2030 and achieve net-zero emissions for our County by 2050. As founding members of ICLEI – Local Governments for Sustainability, we have joined the international "Race to Zero" campaign to reach zero by 2050. This mirrors the timeline established by the Federal government as well. Crucially, because nearly half of our countywide GHG emissions are the result of electricity consumption, our ability to meet these goals is deeply interwoven with the emissions that are released by the fossil fuel power plants that power our grid. In addition, we also expect that the rapid shifts to electrification in the transportation sector will lead to an increased reliance on the grid to power electric vehicles. This transition to electric vehicles is a key pillar of our Climate Action Strategy and elevates the importance of a rapid conversion to carbon-free electricity.

FPL, as the provider for the majority of our County's electricity, is a critical partner in the efforts of our County and others in its service territory to meet the urgency of the moment and reduce GHG emissions sufficiently to avoid the worst projected outcomes of climate change. Figure 1 below identifies that through implementation of the Climate Action Strategy alone, assuming future grid conditions identified in the 2021 TYSP, we project a significant "gap" between our forecasted emissions and target 2030 goal. A cleaner, carbon-free electricity grid is essential to reducing this gap and achieving our goal.

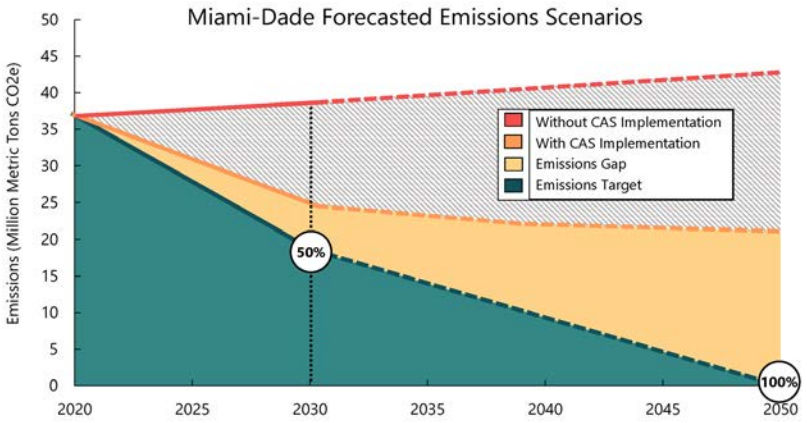


Figure 1. Projected scenarios for GHG emissions in Miami-Dade County. Notably, our CAS Implementation Scenario falls short of our goal. A carbon-free grid would represent a critical path for us to close the gap and reduce remaining emissions. This forecast was developed using future grid conditions identified in the 2021 TYSP.

Another key strategy we are pursuing is reducing the energy demand from new and existing buildings throughout our county. We continue to object to the limited demand-side management, or energy efficiency efforts, considered in FPL's Business as Usual Plan. This is noted in Schedule 3.1, which forecasts summer peak demand and shows that FPL will stop investing in any additional new energy efficiency after 2024. Miami-Dade County has a long history of successful investments in energy efficiency to help curb electricity demand and reduce GHG emissions, and numerous studies in Miami-Dade, Florida and across the country have demonstrated that investments in energy efficiency offer quick paybacks and reduce the need for further expand electrical generation capacity to meet demand. This is particularly salient to the 2022 TYSP, as FPL's grid is currently projected to continue to rely predominantly on fossil fuels for at least the next decade. We strongly urge the PSC to work with FPL to greatly expand their commitment to demand-side management programs that help homeowners and businesses become more efficient energy consumers.

The second important observation we would like to note is the release in June 2022 of NextEra's "Real Zero" plan. This ambitious plan represents the most substantial commitments to carbon-free electricity in the southern United States. Preliminary information from NextEra has indicated that FPL will play a major role in achieving these goals. We are excited to see this commitment, as the trajectory of the FPL grid under the Real Zero plan is much more in line with the carbon reduction investment needed for Florida and Miami-Dade. We would strongly encourage a rapid integration of this plan into the 2023 TYSP. We support the adoption of "Real Zero" into the TYSP, and we look forward to supporting this new vision for a net-zero energy grid that supports our Climate Action Strategy with FPL as they update and implement their ambitious renewable energy commitments.

We urge the PSC to support and encourage FPL to move forward more rapidly with energy conservation and renewable energy deployment by incorporating the Real Zero plan into the 2023 TYSP.

Please do not hesitate to contact our Office of Resilience and Jim Murley, our Chief Resilience Officer, at James.Murley@miamidadegov or by calling (305) 375-4811, if you have any questions. Our Climate Action Strategy is available online at www.miamidade.gov/climateactionstrategy

Sincerely,

Daniella Levine Cava

Daniella Levine Cava
County Mayor

c: Honorable Chairman Jose "Pepe" Diaz, and Members, Board of County Commissioners
Office of the Mayor Senior Staff
James F. Murley, Chief Resilience Officer, Office of Resilience

Local Government

Broward County

MONICA CEPERO, County Administrator
115 S. Andrews Avenue, Room 409 • Fort Lauderdale, Florida 33301 • 954-357-7354 • FAX 954-357-7360

June 15, 2022

Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee FL 32399

Re: FPL Ten Year Site Plan Comments; Docket No. 20220000

Dear Chairman Fay, Commissioners Graham, La Rosa, Clark and Passidomo:

Broward County recently became aware that Florida Power & Light (FPL) is seeking approval of an extreme winter weather (i.e., cold weather) peak demand forecast as part of its 2022 Ten Year Site Plan, with a purported demand increase of 40% above the business-as-usual method. As a major ratepayer ourselves, and on behalf of the two million residents and tens of thousands of businesses of Broward County, we urge you to find this forecast "unsuitable" and require FPL to use a "business-as-usual" resource planning method.

FPL's extreme winter weather peak demand forecast is unsuitable for multiple reasons.

1. The methodology FPL used to develop this forecast is unclear, and most alarmingly, the forecast lacks any reasonable analysis of the probability of a winter storm as severe as that used in the forecast. According to James F. Wilson, Principal of Wilson Energy Economics, who presented on behalf of the Southern Alliance for Clean Energy and Vote Solar, FPL's proposal "does not follow standard industry practices."

2. The forecast projects a demand 40% above the business-as-usual forecast, and as James F. Wilson noted, "what are the appliances that could suddenly add over 9,000 MW?" Unlike residents of cold winter climates, Floridians do not maintain an inventory of electric space heaters or the like in the unlikely event of a deep freeze.

3. FPL's proposed solution takes the utility, and the state, backwards, not only by keeping gas plants open that would otherwise have been retired, but also adding 700 MW of gas peaker plants. The Federal Energy Regulatory Commission made many recommendations in the wake of the 2021 Texas winter event, but adding additional generation capacity was not among them. Retaining or even adding gas plants is unwise, given the potential price volatility of fossil gas (well-illustrated by current events) and what is known about the urgent need to cut carbon pollution to preserve a stable climate.

4. Costs—estimated by FPL to reach $450 million for transmission and distribution upgrades alone—do not seem likely to produce commensurate benefits. To paraphrase

James F. Wilson, building plants that are likely to be used one day every 30 years would not be a sound investment of ratepayer funds.

5. It is widely demonstrated that energy efficiency is the cheapest means of making more energy available, approximately one-third or less the cost of a new source of electricity supply. Rather than incentivize the construction of unnecessary infrastructure which provides utilities an additional guaranteed rate of return, energy providers should be encouraged to invest in robust energy conservation programs to generate this additional capacity, alongside renewable energy investments. Florida simply cannot accommodate additional investment decisions that saddle ratepayers with antiquated energy solutions, and at the expense of environmental goals and aggressive energy conservation strategies better aligned with the public interest.

6. Finally, the County believes it appropriate to acknowledge the parallel between energy and water planning challenges and strategies. Nearly 15 years ago there was a push for water utilities in the southeast Florida to expand capacity to meet a stated 20-year projection for an additional 100 million gallons per day in water demand. The region responded with aggressive water conservation strategies that have produced and sustained a 23% reduction in water demand. This effort, coupled with innovation in water management strategies, has avoided the inordinate cost of redundant capital infrastructure and imposed operational costs, instead providing extensive water, energy, and cost savings enjoyed by both utilities and consumers. We urge Florida energy providers to practice this same prudence with judicious management of existing sources and to emphasize conservation strategies as the first, preferred, and most affordable means of making more energy available for ratepayers across the service area while avoiding unnecessary and permanent cost burdens. The most distinction between these water and energy decisions is that, in the case of water, conservation commitments avoided cost escalations where local officials would have been held accountable, whereas with energy providers, and FPL's proposal, conservation remains unaddressed absent the obligation of direct vetting and accountability to these same ratepayers.

For these reasons, we urge you to find FPL's extreme winter weather peak demand forecast as "unsuitable" and require use of the business-as-usual forecast instead.

Please do not hesitate to contact me if you have any questions about this letter.

Yours sincerely,

Monica Cepero
County Administrator

CC: Broward County Board of County Commissioners

Pasco County

PASCO COUNTY FLORIDA
OPEN SPACES. VIBRANT PLACES.

TOP WORK PLACES 2021 USA

June 21, 2022

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

RE: Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips,

In response to your letter dated May 17, 2022 relevant to the review of the Ten-Year Site Plans (TYSP), Pasco County has reviewed these plans as applicable to our jurisdiction and has no comments related to this information. Should you require further information or assistance, please contact our office.

Thank you for your attention.

Sincerely,

Jeffrey R. Jenkins, MPA, AICP
Executive Planner

Pinellas County

Pinellas County

County Administration

July 21, 2022

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 2022 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. This plan forecasts the significant growth of seventeen (17) planned solar photovoltaic (PV) generation projects/sites totaling 3,100 MW by 2031. Nine (9) of the planned sites are essentially defined at 'TBD' and void of all economics. Yet, DEF has clearly detailed cost data for combustion turbine installations for the same forecast period.

2. 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.

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

3. The plan indicates that most interest in QF sales is from PV developers with sixty (60) active projects and 4,4700 MW of interconnection requests and DEF is the project developer for thirteen (13) of the active projects. The plan documents do not elaborate on what constitutes an "active" project.

4. 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.

5. 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.

Sincerely,

Barry A. Burton
County Administrator

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

Santa Rosa County

SANTA ROSA COUNTY
BOARD OF COMMISSIONERS

Administrative Offices | 6495 Caroline Street, Suite M | Milton, Florida 32570-4592

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DAVE PIECH, District 4
COLTEN WRIGHT, District 5

DEVANN COOK, County Administrator
BRAD BAKER, Assistant County Administrator
TOM DANNHEISSER, County Attorney

June 6, 2022

Mr. Donald Phillips
Engineering Specialist
Public Service Commission
Capital Circle Office Center
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

RE: Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities

Dear Mr. Phillips,

Santa Rosa County has reviewed the 2022 Ten-Year Site Plans for Florida's Electric Utilities and has no comments.

Sincerely,

DeVann Cook
County Administrator
Santa Rosa County

Environmental Groups

Advance Energy Economy, Alianza Center, Catalyst Miami, CLEO Institute, Earth Ethics, Florida Clinicians for Climate Action, Healthcare Without Harm, Healthy Golf, Rethink Energy Florida, League of Women Voters Pensacola Bay Area, Solar United Neighbors

State of Florida

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 17, 2022

TO: Adam J. Teitzman, Commission Clerk, Office of Commission Clerk

FROM: Jacob Imig, Attorney

RE: 20220000 Ten Year Site Plan Workshop Public Comment from Advanced Energy Economy, Alianza Centter, Catalyst Miami, CLEO Institute, Earth Ethics, Florida Clinicians for Climate Action, Healthcare Without Harm, Healthy Gulf, Rethink Energy Florida, League of Women Voters Pensacola Bay Area, and Solar United Neighbors

Please add the following letter regarding the Ten Year Site Plan Workshop from Advanced Energy Economy, Alianza Centter, Catalyst Miami, CLEO Institute, Earth Ethics, Florida Clinicians for Climate Action, Healthcare Without Harm, Healthy Gulf, Rethink Energy Florida, League of Women Voters Pensacola Bay Area, and Solar United Neighbors to the 20220000 docket.

Advanced Energy Economy, Alianza Center, Catalyst Miami, CLEO Institue, Earth Ethics, Florida Clinicians for Climate Action, Healthcare Without Harm, Healthy Gulf, Rethink Energy Florida, League of Women Voters Pensacola Bay Area, Solar United Neighbors

June 15, 2022

Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee FL 32399

Re: FPL Ten Year Site Plan Comments; Docket No. 20220000

Dear Chairman Fay, Commissioners Graham, La Rosa, Clark and Passidomo:

We understand that as part of the annual Ten Year Site Plan process, the Commission must find a utility's plans as suitable or unsuitable. The undersigned organizations urge you to find FPL's extreme winter weather peak demand forecast in its 2022 Ten Year Site Plan unsuitable for the reason cited below.

FPL's new winter demand forecast is based on an extreme winter weather that is unlikely, if ever, to occur. FPL cites the Texas extreme winter weather event in 2021 as an example. Florida is not Texas. During the Texas winter weather event in 2021, temperatures dropped and stayed below freezing for 5 consecutive days, and some cities recorded lows below zero. There was significant snowfall, and ice accumulation of up to ½ inch. A lot of the problems in Texas stemmed from a number of unplanned gas units being offline, freeze related generation outages and gas fuel supply lines.

The Federal Energy Regulatory Commission (FERC) issued recommendations after the Texas winter weather event. Adding additional generation capacity, as FPL suggests in its plan, was not one of the FERC recommendations. FPL proposes keeping several gas units online that were slated for retirement, adding another 700 MW of gas generation, thousands of additional MW of battery storage, and transmission and distribution system winterization. The transmission and distribution improvements are projected to cost over $450 million dollars alone.

When so many families are struggling with difficult choices between paying a power bill and buying medications or food, FPL's move to saddle customers with additional costs is untenable. Customers need relief now. The recent well-publicized FPL bill increases are hitting many families hard – exacerbating already high energy burdens. For instance, higher gas price costs passed on by FPL this year have spiked the fuel portion of power bills by 24% - impacting customers from Miami to Pensacola. FPL has signaled that it will come to the Commission again this year to pass on higher fuel costs to customers. These bill increases do not account for fuel and base rate increases in 2021.

While we recognize that FPL's grid was stressed by a few cold days in 1989 and 2010, its methodology of forecasting an extreme winter weather event in Florida and peak loads during that event is not transparent, nor a practice used by any other utility in the industry. FPL proposes to abandon its "business-as usual" traditional methodology for resource planning – which has served the Commission well in the past - and now base it on an extreme winter event, but attaches no probability of such an extreme event ever taking place. Its extreme event is based on temperatures even lower than those experienced in Florida in 1989 and 2010. It appears that FPL's forecasted electricity demand in response to this improbable extreme event did not use probabilistic simulations to determine whether its winter reserve margin meets resource adequacy criteria – like loss of load probability of once every ten years.

Moreover, FPL does not meaningfully consider energy efficiency and demand response as alternatives to its costly and unprecedented build, build, build approach. Instead FPL should focus on helping customers make their homes more efficient, safe and secure through energy efficiency measures – such as attic insulation, and provide more robust demand response programs. The system benefits of FPL increasing both the scale and depth of energy efficiency programs include less fuel needed to run its units and the deferral or elimination of additional power generation. In addition, these programs help customers reduce energy use and save money on their power bill. Yet, a 2020 American Council for an Energy Efficiency Economy report ranked FPL 51st out of the 52 largest US utilities in capturing energy savings from utility-sponsored energy efficiency programs.

We can and must do better to address the high power bills that so many Florida families are facing today. Adding more cost on them, as proposed in FPL's Ten Year Site Plan, for utility investments that are unsupported by standard industry practice to address an improbable extreme weather event, is not prudent, or responsible resource planning.

As part of your 2022 Ten Years Site Plan process, we urge you to find FPL's extreme winter peak demand forecast **unsuitable.**

Thank you,

Advanced Energy Economy
Michael J. Weiss, Policy Principal

Alianza Center
Marcos Vilar, President

Catalyst Miami
Natalia Brown, Climate Justice Program Manager

CLEO Institute
Yoca Arditi-Rocha, Executive Director

Earth Ethics
Mary Gutierrez, Scientist, Advocate

Florida Clinicians for Climate Action
Dr. Cheryl Holder and Dr. Ankush Bansal, Co-Chairs

Healthcare Without Harm
Catherine Toms, MD, MPH, Senior Advisor for Climate and Health

Healthy Gulf
Christian Wagley, Coastal Organizer, Florida-Alabama

League of Women Voters Pensacola Bay Area
Haley Richards, President

Rethink Energy Florida
Kim Ross, Executive Director

Solar United Neighbors of Florida
Heaven Campbell, Florida Program Director

Environmental Groups

Southern Alliance for Clean Energy

June 15, 2022

Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee FL 32399

Re: Southern Alliance for Clean Energy's Ten Year Site Plan Comments; Docket No. 20220000

Dear Chairman Fay, Commissioners Graham, La Rosa, Clark and Passidomo:

Thank you for the opportunity to provide these comments to assist the Commission in determining the suitability of 2022 Ten Year Site Plans (TYSP). Our comments this year focus on the proposed extreme winter peak demand forecast in Florida Power and Light's (FPL) 2022 TYSP.

The Commission, pursuant to statute, is charged with conducting a preliminary study of the TYSPs and to classify them as "suitable" or "unsuitable." As part of its review, it must consider possible alternatives to the proposed plan, and can suggest alternatives[1] FPL's 2022 TYSP provided two distinct forecast methodologies that produce very different planning outcomes. One represents the "business as usual" P50 method historically relied upon by FPL and this Commission. The other is based on a hypothetical extreme winter weather event and associated load forecast that was not developed in a transparent way, nor is consistent with standard industry practice. FPL has put forth the extreme winter event plan as its "preferred plan."

If the preferred plan is found suitable, the plan will lead to almost $500 million in costs to upgrade FPL's transmission and distribution system alone.[2] Additionally, FPL will add another 700 MW of fossil gas plant capacity; continue to keep several fossil gas units online that were slated for retirement; and add an extra 1,900 MW of battery storage on its system from 2027 to 2031, compared to its business as usual case and traditional method of forecasting winter peak demand.[3] FPL's preferred plan will lead to higher bills through cost recovery in annual cost recovery dockets, such as the Storm Protection Plan Cost Recovery Clause docket (SPPCR), and future base rate increases. For instance, FPL is already planning (even before a Commission suitability determination) to winterize transmission and distribution infrastructure for eventual recovery through the SPPCR for a projected amount of $215 million.[4] Moreover, the preferred plan increases FPL's and the state's reliance on fossil gas infrastructure at a time when customers are being pummeled with spiking bills due to this costly and price volatile fossil fuel. FPL's proposal is a step in the wrong direction for the Company, its customers, and the state, and should be rejected.

[1] Section 186.801, Fla. Stat.

[2] FPL, *Power Delivery Winterization Update* presentation, p.2.

[3] FPL, Ten Year Site Plan, April 1, 2022, p. 7.

[4] FPL, *Direct Testimony of Michael Jarro*, Exhibit MJ-1, April 11, 2022, pp. 52-57.

FPL has indicated in its response to the Commission, and reiterated at the TYSP workshop, that it If FPL's business as usual plan is deemed suitable for planning purposes and the preferred plan is found not suitable for planning purposes, absent clear direction to the contrary from the Commission, FPL would interpret such a decision regarding its 2022 TYSP to be a directive from the Commission that FPL should not plan for extreme winter weather.[5] We urge the Commission, for the reasons provided below, to do just that: find the FPL business as usual plan suitable, and alternatively find the preferred plan, based on a hypothetical extreme winter weather event, unsuitable. The business-as-usual forecasting method does not ignore the potential for winter weather to drive winter peak load.

FPL misapplies the Texas experience to Florida

In its TYSP, FPL cites the Texas extreme winter weather event in February of 2021 as a driver of its extreme winter weather peak demand forecast. Yet, during the Texas winter weather event in 2021, temperatures dropped and stayed below freezing for 5 consecutive days, and some cities recorded lows below zero degrees Fahrenheit. There was significant snowfall, and ice accumulation of up to one half inch in some Texas cities. Much of the problem in Texas stemmed from a number of gas units being offline, freeze-related generation outages, and gas fuel supply lines. A combination of freezing issues (44.2 percent) and fuel issues (31.4 percent) caused 75.6 percent of the unplanned generating unit outages, derates, and failures to start.[6] The Federal Energy Regulatory Commission (FERC) issued recommendations after the Texas winter weather event. The addition of additional generation capacity, as FPL recommends in its preferred plan, is not one of the FERC recommendations.[7] It was not the lack of generation capacity in Texas that led to outages, it was the failure of the capacity to generate power that can occur when temperatures reach below approximately 20 degrees Fahrenheit.

FPL additionally cites two winter events in 1989 and 2010 where low temperatures were experienced for a few days that stressed the utility's system. The 1989 event, more than 33 years ago, led to rolling blackouts that were typically 15-30 minutes in duration.[8] It must be noted that while there was significantly higher load on FPL's system during these two events, it appears FPL's management of its generating resources contributed to an emergency situation that required rolling blackouts in 1989, and to a lesser degree the close call in 2010.

During the 1989 approximately two-day winter event (from Saturday evening December 23rd to Monday morning December 25th) FPL had 2,749 MW of forced outages unrelated to the winter event during the duration of the event.[9] Both Turkey Point nuclear units, 688 MW each, were forced offline due to corroded terminal boards on steam isolation valves, and Port Everglades gas turbines lost 40% of their 1,458 MW capacity due to fuel issues, while the Manatee 1 Unit's 791 MW capacity was lost to water wall tube leaks. The highest MW firm load that was not met was on Monday morning December 25 of 2,700 MW, which is less than the 2,749 MW of forced outages on FPL's system during the duration of the event.[10]

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[5] FPL Response to PSC Staff Third Data Request Nos. 3 and 4, May 24, 2022.

[6] FERC, *Final Report on February 2021 Freeze Underscores Winterization Recommendations* at: https://ferc.gov/news-events/news/final-report-february-2021-freeze-underscores-winterization-recommendations

[7] *Id.*

[8] Florida Public Service Commission, *Peninsular Florida Cold Weather Capacity Shortfall Emergency,* February 2, 1990, p. 6.

[9] *Id.* at 140–144.

[10] *Id.*

During the January of 2010, the second winter weather event cited by FPL, the Company had adequate capacity to meet its customer demand. FPL concedes that it had a "significant amount" of generation offline - 1,980 MW offline - due to "breakage."[11] Moreover, FPL provided 525 MW of capacity to Duke Energy Florida's predecessor, Progress Energy, during the event, and still had 1,144 MW of reserves available to meet load.[12]

The events cited for support by FPL in its TYSP to overbuild its system, upon closer examination, are not as compelling as FPL characterizes them. Regardless, the method used to estimate temperatures and project load during an even colder future hypothetical extreme event were not derived utilizing standard industry practice, nor are these methods used by any other utility in the country, and should be dismissed by the Commission.

FPL's extreme weather event forecast and the associated winter peak demand projection is not transparent and does not comport with standard industry practice

FPL TYSP workshop presenters stated that FPL began its analysis by developing a hypothetical extreme winter weather event. It did so by taking the low temperature during the 1989 2 day event (28 degrees in Miami) and the duration of the 2010 event (which had a low of 33 degrees in Miami, but lasted 3 days). Yet it is unclear what temperatures FPL used in its hypothetical winter event in its responses to PSC Staff data requests. For instance, FPL states that it used a temperature of 27 degrees in Miami (recorded in 1917) and in other instances it states that it assumed a Miami temperature of 20 degrees.[13] The exact iterations of its extreme winter event development have not been presented coherently. In any event, FPL concedes that it did no probabilistic analysis of this hypothetical extreme event taking place, if ever, in Florida. FPL likewise admits that it did not do any analysis of its individual divisions (regions). In other words, it did not analyze an extreme winter event that takes place in Pensacola but not in Miami, or vice versa. The weather variables used are based on composite hourly temps from weather stations in Miami, Ft. Myers, Dayton Beach, and West Palm Beach.[14] Yet at the TYSP workshop, FPL presenter Kim could not recall how the different weather stations were weighted in developing its hypothetical extreme weather event.

Southern Alliance for Clean Energy and Vote Solar presenter, Jim Wilson,[15] indicated that using a three hour temperature window produces a clearer, more accurate perspective on winter weather extremes than using a single hourly low temperature. Moreover, Mr. Wilson states that FPL should not have aggregated very different regions with very different temperatures and performed a regression analysis. Rather the Company should have performed a regression analysis on specific division in its systems, then aggregated the results. FPL's method ignores the "saturation" of the system during very cold temperatures. At some point, all of the equipment that can be on is turned on, and a drop in temperature by a degree does not result in the same increase in load. The relationship tends to be non-linear. FPL did not appear to do analysis to account for this trend, instead they performed a linear extrapolation from 40

[11] Florida Public Service Commission, *Determination of Need for Okeechobee Clean Energy Center, Unit 1 by Florida Power and Light Company*, Docket No. 20150196, Hearing Transcript, December 3, 2015, pp. 552-554.

[12] *Id* at 555.

[13] *See e.g.* FPL Response to PSC Staff's Third Data Request, May 24, 2022, pdf p. 691.

[14] FPL, Ten Year Site Plan, April 1, 2022, p. 57.

[15] Mr. Wilson has significant experience in the Southeast and nationally on load forecasting and resource planning issues. He has engaged as an expert in recent resource planning dockets in Georgia, North and South Carolina and Virginia. *See* Jim F. Wilson, *Load Forecasting and Resource Planning for Extreme Cold* presentation, June 1, 2022, at http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/VoteSolar_Presentation.pdf.

degrees to 29 degrees.[16] Lastly, in regards to weather, Mr. Wilson identified a minimum temperature trend of a one degree increase in minimum temperatures every five to six years. Therefore, a low temperature of 29 degrees in 1989 would now, according to trends he has observed in FPL's territory, translate to a low temperature of 33 degrees today.[17] These minimum temperature trends were not considered in FPL's hypothetical extreme winter event.

Beyond the deficiency of analysis in the extreme winter weather event assumptions, FPL's load assumption and resource plan response are inconsistent with standard industry practice. This is confirmed by FPL as it states that it is not aware of any other utility in the country that uses an extreme winter weather event for planning purposes.[18]

Standard industry practice demands that a generation capacity requirement be set by establishing a peak load forecast plus a reserve margin. Mr. Wilson provided a two-step process in establishing a peak load forecast: 1) establish long term median forecast (P50). The median forecast is one where it is equally likely that temperatures may lower or higher than the P50 forecast; 2) then gather as much weather data as possible around that P50 forecast to see how high the electricity load rises in relation to temperatures. Afterwards, this information goes into a probabilistic simulation to determine the reserve margin over P50 needed to provide an adequate level of capacity. The probabilistic simulation will include a number of important assumptions including power plant outages, and shared resources from other regions. This standard industry process determines if there is enough capacity to meet appropriate resource adequacy criteria such as the "one day in 10 years" metric.[19]

FPL simply did not perform this probabilistic determination. Instead, FPL appears to graft the 2010 flat load pattern onto the 1989 spike in minimum temperature to achieve its desired load projection. We say "appears" because we were not able to recreate FPL's method based on information provided. FPL describes its unique approach as a "hybrid-type forecast" where P50 is used for 11 months while an extreme peak is used for the month of January only. It then uses the extreme winter peak load forecast as a capacity target - which would lead the Company to overbuild its system to meet a load projection 43% above the business as usual (P50 methodology). It should be noted that utilities that file TYSPs, based on the P50 methodology, have historically overestimated projected retail electricity sales, although the error rate has declined in recent years.[20] In response to a staff question during the TYSP workshop FPL's presenters agreed that its P50 business as usual forecast tends to overstate FPL's actual winter load on its system. FPL presenter Whitely stated at the TYSP workshop that FPL intends to eliminate *any outages* due to an extreme winter weather event. This is wholly inconsistent with standard industry practice and will lead to an absurd overbuilding of its system - or as Mr. Wilson stated: building power additions to meet load on a one day-in-30-years basis.

This absurd overbuilding would add significant and unnecessary costs on customers through their power bills - - many of whom are already energy burdened and struggling to pay power bills. Governor DeSantis has recently expressed his concern over rising prices and bill impacts in his veto HB 741 in stating the following: "[g]iven the United States is experiencing its worst inflation in 40 years and consumers have

[16] FPL Response to PSC Staff's Third Data Request, No.2, Attachment 9, p.14, May 24, 2022

[17] *Id.* at p. 14.

[18] FPL Response to PSC Staff's Third Data Request, Response No. 14k,,May 24, 2022.

[19] Jim F. Wilson, *Load Forecasting and Resource Planning for Extreme Cold* presentation, June 1, 2022, at http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/VoteSolar_Presentation.pdf.

[20] Florida Public Service Commission, *Review of 2021 Ten year Site Plans,* October 2021, p. 26.

seen steep increases in the price of gas, groceries and escalating bills, the state of Florida should not contribute to the financial crunch that our citizens are experiencing."[21]

Demand side options not explored

FPL provides no alternative methods of addressing its hypothetical - once in thirty year - extreme winter event in its TYSP, nor did it at the TYSP workshop. Rather than overbuilding its system and passing on unnecessarily high costs to customers, the Company should increase its focus on demand response and energy efficiency as a planning resource.

FPL's abysmal achievements on capturing energy savings through energy efficiency programs is well established. The Company effectively proposed zero (1.023 GWh over a ten year period) as an energy savings goal in the 2019 Florida Energy Efficiency and Conservation Act (FEECA) proceedings.[22] Its proposed goals were based on the Rate Impact Measure (RIM) test and the 2-year payback screen that eliminate the highest impact, lowest cost measures from a utility's energy efficiency potential analysis - and are not used by any other state for setting goals. Therefore, FPL's proposed goals and poor performance on capturing energy savings from energy efficiency programs is predictable. In the TYSP, FPL states that it uses the DSM goals set for the utility in Order No. PSC-2019-0509-FOF-EG. After that time frame, from 2025-2031, the Company says it included additional "cost-effective" DSM for years 2025 through 2031.[23] This "cost effective" DSM is based on its proposed goals in 2019, which represent effectively zero energy savings. When a utility under-invests in demand side measures, it and its customers are forced to rely on more costly supply side resources.

Energy efficiency provides a number of system benefits such as reduced fuel use. It provides system benefits to the utility while insulating customers from volatile fossil gas price spikes and helps lower bills, not only for customers that participate in utility sponsored energy efficiency programs, but all customers due to the system benefits to the utility.

A 2020 American Council for an Energy Efficiency Economy report ranked FPL 51st out of the 52 largest US utilities in capturing energy savings from utility-sponsored energy efficiency programs.[24] In the Southern Alliance for Clean Energy 4th annual Energy Efficiency in the Southeast report, FPL continues to drag down the Southeast region on the energy saving metric. FPL captured a mere 0.04% energy savings in 2021 as a percentage of annual sales. This is below the Southeast utility average and well below the national average of 0.72%.[25]

Pursuant to its proposed extreme winter peak demand forecast, FPL continues to double down on fossil gas reliance and volatile costs. The recent well-publicized FPL bill increases are hitting many families hard – exacerbating already high energy burdens. For instance, higher gas price costs passed on by FPL this year have spiked the fuel portion of power bills by 24% - impacting customers from Miami to Pensacola. FPL has

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[21] Governor Ron DeSantis, An Act Relating to Net Metering veto letter, April 27, 2022

[22] FPL, *Commission Review of Numeric Conservation Goals*, Petition, April 12, 2019. *See also:* Southern Alliance for Clean Energy, George Cavros, *There They Go Again in Florida, Abandoning Customers Who Want to Lower Bills*, at https://cleanenergy.org/blog/there-they-go-again-in-florida-abandoning-customers-who-want-to-lower-bills/

[23] FPL, Ten Year Site Plan, April 2021, p. 81.

[24] American Council for an Energy Efficiency Economy, *Unrealized Potential: Expanding Energy Efficiency Opportunities for Customers in Florida*, January 2021, p. 2.

[25] Southern Alliance for Clean Energy, *Energy Efficiency in the Southeast*, February 2022, p. 10.

already indicated that it is coming to the Commission *again*, to recover additional fuel costs from customers due to higher than projected fossil gas costs.[26] The Company, and the other state's utilities, continue to be heavily reliant on fossil fuels for generating electricity. With increasing global geo-political market uncertainty and continued construction of LNG export terminals in the US there is no end in sight, in the near term, to high and volatile fossil gas prices. FPL's proposed move to greater reliance on fossil gas is a step in the wrong direction.

Conclusion

The proposed FPL preferred resource plan is fatally flawed. It is based on extreme weather assumptions that are unlikely, if ever, to occur. The associated projected load of such an extreme event was not developed in a transparent or customary fashion, nor is FPL's plan to overbuild its system based on standard industry practice. Moreover, FPL presents no evidence that it explored demand side management as a resource before proposing to pile on more cost on to customer bills. The preferred plan is the wrong direction for customers and the state and should be deemed unsuitable by the Commission.

Sincerely,

/s/Maggie Shober
Maggie Shober, Research Director

/s/George Cavros
George Cavros, Florida Director & Energy Policy Attorney

[26] FPL, Maria Moncada, mid-course correction letter, Docket No. 20220001-EI, April 15, 2022.

Environmental Groups

Solar Untied Neighbors

Antonia Hover

From: Antonia Hover on behalf of Records Clerk
Sent: Tuesday, May 31, 2022 8:18 AM
To: 'Heaven Campbell'
Cc: Consumer Contact
Subject: RE: Docket 20220000 - Comments on the Ten Year Site Plan

Good Morning, Heaven Campbell.

We will be placing your comments below in consumer correspondence in Docket No. 20220000, and forwarding them to the Office of Consumer Assistance and Outreach.

Thank you!

Toni Hover
Commission Deputy Clerk I
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399
Phone: (850) 413-6467

From: Heaven Campbell <heaven@solarunitedneighbors.org>
Sent: Friday, May 27, 2022 5:22 PM
To: Records Clerk <CLERK@PSC.STATE.FL.US>
Subject: Re: Docket 20220000 - Comments on the Ten Year Site Plan

I apologize, the correct document is attached here. Please disregard the previous document.

On Fri, May 27, 2022 at 5:20 PM Heaven Campbell <heaven@solarunitedneighbors.org> wrote:

> Good Afternoon,
>
> Please find the attached comments on Ten Year Site Plans, for the June 1 workshop.
>
> Best Regards,
>
> Heaven Campbell
>
> --
> **Heaven Campbell**
> Florida Program Director
> p: 904-701-4059
> Pronouns: she/her/hers

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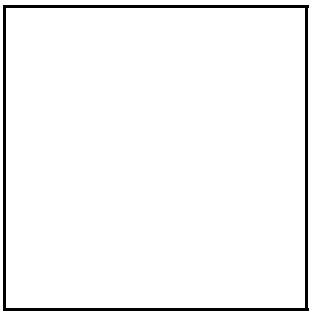
Heaven Campbell
Florida Program Director

p: 904-701-4059
Pronouns: she/her/hers



Ways to Support Solar: Go Solar Volunteer Donate

Dear Public Service Commissioner and Staff,

Thank you for your hard work in ensuring a reliable and reasonable energy system for Floridians. I am the Florida Program Director of Solar United Neighbors. We represent 40,000 Floridians.

So many of our members in NW FL are, frankly, traumatized by rate hikes, due largely to gas volatility, and customer service and billing failures. Another point of stress has been the minimum bills from FPL and Duke Energy that have left families with large, long-term investments recalculating paybacks. That is why we are providing written comments on some of the anomalies we feel are in the TYSPs. The most glaring being an implausible winter load forecasting being requested by FPL. I would also posit that it is not a coincidence that they supported HB 741 with the “kill switch” provision of 6.5% of projected DG penetration of summer peak load of a utility and are now proposing that they forecast larger winter peaks. The implied devaluation of solar peak shavings is apparent. We ask that you find this unreasonable.

I would like to specifically note that FPL predicts 1.2% of annual customer growth. This will amount to–just as we saw last year–larger growth than all of their current net metered customer class since 2008. This will continue the trend of extremely low DG penetration and minority ratepayer class representation.

Customers in JEA and still demanding the reinstatement of their net metering rate. Instead, JEA has touted their battery incentive sharing, “since its inception, over 370 residential storage systems have been installed.” This is unnecessarily vague and doesn’t share the monetary amount of incentives distributed or if all of those new battery installs have *received* the incentive or simply been connected to the grid. Clarity on this and the DSM incentives impact on T&D savings and peak load shavings should be requested.

Lastly, Lakeland Electric claims that customer-owned distributed generation “contributes to reduce system peak demand/energy avoiding the generation/purchase at higher cost. This helps to reduce the average cost of electricity to LE Customers[,]” yet plans to build out additional gas infrastructure despite our state’s overreliance. They could encourage customer-owned renewables to continue to reduce the peak demand for one of Florida’s fastest growing areas. They share that LE “has allowed the interconnection of these systems in a “net meter” fashion.” They fail to mention that they are the only utility in Florida, and in a national minority, with a residential demand charge that customers have testified cripples their families’ lifestyles. One of the staunchest critics is a local dad who feels financially punished for making his kids pancakes on weekend mornings. This demand charge is the required rate plan for all residential solar customers.

We ask that the PSC more closely scrutinize the role, or lack thereof, of customer-owned renewables in TYSPs and respectfully believe that reasonable planning often excludes customer-level consideration from the utilities.

Nonprofit Agencies

Our Children's Trust

Antonia Hover

From: Antonia Hover on behalf of Records Clerk
Sent: Monday, August 22, 2022 2:57 PM
To: 'david@ourchildrenstrust.org'
Cc: Consumer Contact
Subject: FW: Letter re: Utilities' 2022 Ten-Year Site Plans, Docket No. PSC-20220000
Attachments: 2022.08.22_PSC 2022 TYSP Letter_Final.pdf

Good Afternoon, Mr. Schwartz.

We will be placing your comments below in consumer correspondence in Docket Number 20220000, and forwarding them to the Office of Consumer Assistance and Outreach.

Thank you!

Toni Hover
Commission Deputy Clerk I
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399
Phone: (850) 413-6467

From: David Schwartz <david@ourchildrenstrust.org>
Sent: Monday, August 22, 2022 1:59 PM
To: Keith Hetrick <khetrick@psc.state.fl.us>; Margo DuVal <mduval@psc.state.fl.us>; Jacob Imig <JImig@psc.state.fl.us>; Records Clerk <CLERK@PSC.STATE.FL.US>
Subject: Letter re: Utilities' 2022 Ten-Year Site Plans, Docket No. PSC-20220000

Dear Mr. Hetrick, Ms. Duval, Mr. Imig, and PSC Clerk,

On behalf of Florida's youth, including Delaney Reynolds, Levi Draheim, Valholly Frank, and Isaac Augsperg, Our Children's Trust submits the attached letter concerning the 2022 ten-year site plans submitted to the Florida Public Service Commission by Florida's electric utilities. We respectfully urge the Commission to find all 2022 ten-year site plans "unsuitable" as they are not consistent with various state legal requirements nor the utilities' own public commitments to increase the use of renewable energy and achieve decarbonization targets.

We appreciate your consideration of this letter and look forward to working with the Commission as it reviews and evaluates utilities' 2022 ten-year site plans. We respectfully request that you respond to this letter, in writing, at your earliest convenience and in advance of your determination as to the suitability of utilities' 2022 ten-year site plans.

Please let me know if you have any trouble accessing the attachment.

Sincerely,

David

David Schwartz
Staff Attorney
he/him

Our Children's Trust
P.O. Box 5181
Eugene, OR 97405
O: 541-375-0158
C: 310-918-3858

#YouthvGov
DONATE NOW

August 22, 2022

Keith Hetrick, General Counsel
Margo Duval, Office of the General Counsel
Jacob Imig, Senior Attorney
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850
Via email to: Keith Hetrick: khetrick@psc.state.fl.us; Margo Duval: mduval@psc.state.fl.us; Jacob Imig: jimig@psc.state.fl.us ; and PSC Clerk: clerk@psc.state.fl.us.
Re: Utilities' 2022 Ten-Year Site Plans; Docket No. PSC-20220000

Dear Mr. Hetrick and Ms. Duval,

On behalf of Florida's youth, including Delaney Reynolds, Levi Draheim, Valholly Frank, and Isaac Augsperg, Our Children's Trust ("OCT") submits the following letter concerning the 2022 ten-year site plans submitted to the Florida Public Service Commission ("PSC") by Florida's electric utilities.[1] We respectfully urge the PSC to find all site plans "unsuitable"[2] as they are not consistent with state legal requirements nor the utilities' own public commitments to increase the use of renewable energy and achieve decarbonization targets. OCT is the only law firm in the United States dedicated to representing youth whose fundamental, constitutional rights to life, liberty, property, and equal protection of the law are being infringed by the government's climate change-inducing conduct. OCT's work aims to secure young people's constitutional rights to a safe climate and systemic and science-based climate remedies at every level of government.

As you know, time is running out to avoid the worst effects of climate change, and these effects are already being felt by Florida's youth in ways that were unimaginable one generation ago. The PSC's ten-year site plan review process represents the only long-term energy planning undertaken by the State of Florida. For years, the PSC has routinely found utilities' ten-year site plans to be "suitable" even though they are inconsistent with state law and energy policy, and have resulted in an energy system that is violating the constitutional rights of Florida youth. The PSC is required by law to regulate public utilities "in the public interest" as "an exercise of the police power of the state for the protection of the public welfare." Fla. Stat. § 366.01. The PSC should not abdicate its responsibility to rigorously determine whether utilities' ten-year site plans are "suitable" under Florida law and consistent with state legal requirements to "diversify the

[1] *See* Fla. Admin. Code §§ 25-22.071(1)(a), (b) (only electric utilities with existing generating capacity of 250 mW or greater, or those that construct a new generating facility of 75mW or greater are required to submit ten-year site plans). Ten (10) electric utilities submitted 2022 ten-year site plans – Duke Energy Florida, Florida Municipal Power Agency, Florida Power & Light, Gainesville Regional Utilities, JEA, Lakeland Electric, Orlando Utilities Commission, Seminole Electric Cooperative, City of Tallahassee Utilities, and Tampa Electric Company. *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans.
[2] *See* Fla. Stat. § 186.801(2).

types of fuel used to generate electricity in Florida" and "lessen Florida's dependence on natural gas and fuel oil for the production of electricity."[3]

OCT asks the PSC to find that the utilities' 2022 ten-year site plans are "unsuitable" under Fla. Stat. § 186.801(2) for the reasons set forth in this letter. The utilities' 2022 ten-year site plans violate Florida law by, among other deficiencies as described below, facilitating increased natural gas infrastructure and use over this critical period for climate change mitigation opportunity. Although NextEra and Duke Energy have publicly announced emissions reduction plans, their 2022 site plans still forecast significant—and in the case of Duke Energy Florida, increased—natural gas use over the next decade. The PSC cannot continue to find such plans "suitable" that lock-in Florida's reliance on fossil fuels and which are contrary to state law and harmful to the public interest. OCT urges the PSC to find utilities' 2022 ten-year site plans to be "unsuitable for planning purposes" and to suggest alternatives to each plan pursuant to Fla. Stat. § 186.801(2). We respectfully request that you respond to this letter, in writing, at your earliest convenience and in advance of your determination as to the suitability of the 2022 ten-year site plans. Our clients are also available to meet with you in person to discuss the contents of this letter, should you find that useful.

Respectfully submitted,

/s/ *Andrea K. Rodgers*
Andrea K. Rodgers
OCT Senior Litigation Attorney
andrea@ourchildrenstrust.org

/s/ Mitchell A. Chester
Law Office of Mitchell A. Chester, P.A.
Plantation, Florida
mchester@mitchellchester.com

David Schwartz
OCT Staff Attorney
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[3] Fla. Stat. § 366.92(1).

The PSC's Suitability Findings Must Comply With State Law & Policy

The PSC is mandated to regulate and supervise Florida's electric utilities in the public interest with respect to rates, services, and other matters.[4] The PSC oversees the ten-year site plan process, through which electric utilities submit their plans for power-generation, including forecasts of energy sources and proposed locations of new generating units.[5] The PSC is the sole agency tasked with reviewing utilities' ten-year site plans and has the sole authority to determine whether a utility's plan is "suitable" or "unsuitable."[6] The PSC also has the power to "suggest alternatives" to utilities' plans.[7]

The PSC's ten-year site planning process is the "culmination" of Florida's version of integrated resource planning, and the ten-year site plans themselves set forth the utilities' load forecasts and how it plans to meet those generation needs over a ten-year period, so as to "give state, regional, and local agencies advance notice of proposed power plants and transmission facilities."[8] The PSC is tasked with undertaking a "preliminary study" of utilities' ten-year site plans, and while the plans may be amended at any time upon notification to the PSC so that they are up-to-date for planning purposes, a "suitable" determination from PSC serves as the agency's official endorsement of the utility's approach to electricity generation as being in the public interest in the short- and long-term. Indeed, the PSC's suitability findings are made available by PSC "to the Florida Department of Environmental Protection for its consideration at any subsequent certification proceeding pursuant to the Electrical Power Plant Siting Act or the Electric Transmission Line Siting Act."[9]

Since at least 1999, the furthest back the PSC's publicly-available online records go,[10] the PSC has not once found a utility's ten-year site plan to be "unsuitable."[11] For over two decades, the PSC has published a report that contains a largely copy-pasted analysis of utilities' ten-year site plans (save for the changing figures) and which invariably finds such plans "suitable."[12] As detailed below, the PSC's suitability determinations have historically been made without a

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[4] *See* Fla. Stat. § 366.01.
[5] *See* Fla. Stat. § 186.801(1).
[6] *See* Fla. Stat. § 186.801(2).
[7] *Id*.
[8] Fla. Pub. Serv. Comm'n, *Review of the 2021 Ten-Year Site Plans of Florida's Electric Utilities* 7 (Oct. 2021), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2021/Review.pdf.
[9] *Id.* at 1-2.
[10] *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans.
[11] Although in 2000, PSC found the City of Tallahassee Utilities' plan to be "conditionally suitable", *see* Fla. Pub. Serv. Comm'n, *Review of Electric Utility 2000 Ten-Year Site Plans* 7, http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/archive/tysp2000.pdf.
[12] *See, e.g.,* Fla. Pub. Serv. Comm'n, *Review of the 2021 Ten-Year Site Plans of Florida's Electric Utilities* 9 (Oct. 2021), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2021/Review.pdf. (The Commission's ultimate statement finding all utilities' plans "suitable" is largely the same year-after-year: "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.").

proper analysis of the factors set forth in the ten-year site plan statute and without consideration of whether the plans anticipate providing energy in a way that protects public welfare.[13] Ultimately, the PSC's systematic approval of ten-year site plans that continuously project increases in fossil fuel use has led to precisely the sort of electricity system that Florida's Legislature sought to avoid when it enacted the ten-year site plan requirement, the Florida Renewable Energy Policy, and other state laws designed to protect the public interest.[14] The PSC's decisions have resulted in an electrical power system that is economically harmful to Florida consumers and that causes climate change that is injuring Florida's youth.

Given the technical and economic feasibility of wide-scale adoption of zero-carbon renewable sources of energy in Florida—as evidenced by Florida Power & Light ("FPL") and Duke Energy Florida's ("DEF") public decarbonization commitments and studies by experts showing how to decarbonize Florida—the PSC should find utilities' 2022 ten-year site plans "unsuitable" for the following reasons:

1. Plans fail to consider the lack of fuel diversity they propose and fail to consider the anticipated environmental impacts of near complete dependence on natural gas.
2. Plans do not analyze alternatives to heavy reliance on natural gas, including renewable energy alternatives that are available and economically and technologically feasible.
3. Plans are inconsistent with the State Comprehensive Plan.
4. Plans violate Florida's Renewable Energy Policy.
5. Plans are inconsistent with FDACS' Renewable Energy Goals.
6. Plans ignore city and county decarbonization requirements.
7. Plans are inconsistent with utilities' own public decarbonization commitments.

Once the PSC finds utilities' 2022 plans "unsuitable," it should "suggest alternatives" to the plans pursuant to Fla. Stat. § 186.801(2) that bring the plans into compliance with Florida law and with certain utilities' own public decarbonization commitments.

Utilities' 2022 Ten-Year Site Plans Fail to Consider Lack of Fuel Diversity—Fla. Stat. § 186.801(2)(b)

Fuel diversity in electricity production is vital as it provides options and flexibility to ensure that Floridians can keep the lights on in times of expected, and unexpected, events. It also serves to ensure rate affordability and Florida's energy independence. The utilities' 2022 plans overwhelming reliance on one source of fuel—natural gas—supports a finding that the plans are unsuitable. The PSC is required to consider plans' collective effect on fuel diversity in Florida.[15] The PSC's analysis of fuel diversity must be consistent with the express legislative intent to "lessen Florida's dependence on natural gas and fuel oil for the production of electricity"

[13] *See* Fla. Stat. §§ 186.801(2), 366.01.
[14] *See* Fla. Stat. § 366.92.
[15] Fla. Stat. § 186.801(2)(b).

mandated in Florida's Renewable Energy Policy.[16] By approving ten-year site plans that project significant new or increased dependence on natural gas generation, the PSC fails to consider the effects of the current and projected lack of fuel diversity in Florida's electricity system, with devastating consequences to Florida's environment, economy, and young Floridians.

Of the ten electric utilities to submit 2022 ten-year site plans, seven utilities—DEF, Florida Municipal Power Agency, Gainesville Regional Utilities, Lakeland Electric, Seminole Electric Cooperative, City of Tallahassee Utilities, and Tampa Electric Company—propose increases in their natural gas use over the 2021 to 2031 time period.[17] For these utilities proposing to increase their natural gas usage by 2031, the *lowest* proposed percentage of energy generation to come from natural gas in 2031 is 70.6 % (Gainesville), while the highest is nearly 100% (Tallahassee).[18] Four of these utilities—Florida Municipal Power Agency, Lakeland, Seminole, and Tallahassee—propose more than 80% of their power to come from natural gas in 2031.[19] Seminole Electric Cooperative, which serves approximately 1.9 million customers, has the most drastic proposed increase in natural gas use over the planning period of 55.9% (26.9% in 2021 to 82.8% natural gas in 2031).[20] Collectively, these seven utilities serve over 5 million residential and commercial customers across the state of Florida.

Although the utilities all propose to complement their natural gas generation with one or more other forms of power production—increasingly solar, but generally also coal, nuclear, or "landfill" "biogas" or other forms of "renewable" natural gas—the overall trend in Florida's electricity sector is dominated by fossil natural gas. Florida's dependence on natural gas is not an aberration or accident—it is the result of the PSC's long-standing practice of rubber-stamping utilities' ten-year site plans as "suitable," since this is the only form of long-range energy planning done by Florida's government. Florida's dependence on natural gas is a bad deal for both consumers and the environment.

Current natural gas prices are highly volatile and have increased dramatically,[21] and this price volatility is typically passed directly onto consumers.[22] Indeed, earlier this year, the PSC

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[16] *See* Fla. Stat. § 366.92(1).
[17] *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans (2022 – in particular the "Schedule 6.1" and "Schedule 6.2" Tables in each utility's plan details its fuel requirements in both GWh and percentages, respectfully).
[18] *See id*.
[19] *See id*.
[20] Seminole Electric Cooperative, *Ten-Year Site Plan 2022 – 2031 (Detail as of December 31, 2021)*, at 22 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Seminole%20Electric%20Cooperative.pdf (Schedule 6.2).
[21] Scott Disavino, *U.S. Natgas Volatility Jumps to a Record as Prices Soar Worldwide*, REUTERS.COM (Oct. 7, 2021), https://www.reuters.com/business/energy/us-natgas-volatility-jumps-record-prices-soar-worldwide-2021-10-06/; Liz Hampton, *Price Volatility and Rising Demand Revive U.S. Natural Gas Trading*, REUTERS.COM (Apr. 8, 2022), https://www.reuters.com/business/energy/price-volatility-rising-demand-revive-us-natural-gas-trading-2022-04-08/.
[22] *EIA Forecasts U.S. Winter Natural Gas Bills Will be 30% Higher than Last Winter*, U.S. Energy Info. Admin., EIA.GOV (Oct. 25, 2021), https://www.eia.gov/todayinenergy/detail.php?id=50076 ("Changes in natural gas spot prices typically get passed along to retail rates over a period of months because of regulatory rate structures. Utilities

approved a massive rate increase for FPL customers and did so in large part due to the rising costs of natural gas.[23] Florida's overreliance on natural gas also thwarts Florida's energy independence and economic wellbeing, as up to $5 billion leaves the state's economy every year to pay for out-of-state gas.[24] The utilities' 2022 ten-year site plans do not address the troubling lack of fuel diversity that will continue if the plans are fully implemented, and for this reason alone the PSC should find these plans to be "unsuitable."

Utilities' 2022 Ten-Year Site Plans Do Not Analyze Anticipated Environmental Impacts of Proposed Natural Gas Power Plants—Fla. Stat. § 186.801(2)(c)

Under Fla. Stat. § 186.801(2)(c) the PSC must specifically consider the "anticipated environmental impact of each proposed electrical power site" detailed in a utility's ten-year site plan.[25] Not only do the utilities' 2022 ten-year site plans not address the substantial environmental and climate impacts stemming from their natural gas-dependent plans, the plans that do propose new natural gas units do not evaluate the environmental or climate impacts of these new generation facilities. Of the ten utilities that filed 2022 ten-year site plans, three—DEF, Lakeland, and Seminole—propose to construct new natural gas-fired generation over the course of the planning period.[26] This proposed new generation totals more than 2,000 MW.[27] The most significant natural gas additions over the current planning period are proposed by Seminole Electric Cooperative—it plans to add 1134 MW of natural gas in Q4 of 2022; 609 MW of natural gas in 2025; and 347 MW of natural gas in 2027.[28]

Seminole's plan does not evaluate the "anticipated environmental impacts" from these plants' construction; the site plan does not contain the words "climate change," "methane," or

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generally cannot profit or lose money from natural gas commodity sales, whose costs are passed along directly to the consumer.")

[23] *See, e.g.,* Hannah Morse*, Your Next Florida Power & Light Electric Bill is Going Way Up. Here is Why and How Much*, PALMBEACHPOST.COM (Jan. 7, 2022), https://www.palmbeachpost.com/story/news/2022/01/07/florida-power-light-fpl-customers-see-higher-electricity-bills-2022/9080639002/.

[24] Katie Chiles Ottenweller, *Vote Solar, More than $5 Billion Flees Florida's Economy Every Year to Pay for Out-of-state Fossil Fuels*, VOTESOLAR.ORG (July 13, 2020), https://votesolar.org/more-than-5-billion-flees-floridas-economy-every-year-to- pay-for-out-of-state-fossil-fuels/.

[25] Fla. Stat. § 186.801(2)(c).

[26] *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans.

[27] *See* Duke Energy Florida, *Ten-Year Site Plan as of December 31, 2021; Undocketed*, at 3-2 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Duke%20Energy%20Florida.pdf (214 MW natural gas proposed in 2029); Lakeland Electric, *Ten Year Site Plan 2022-2031*, at 1-1 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Lakeland%20Electric.pdf (adding 120 MW natural gas by end of 2023); Seminole Electric Cooperative, *Ten-Year Site Plan 2022 - 2031 (Detail as of December 31, 2021)*, at 35 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Seminole%20Electric%20Cooperative.pdf (noting three planned natural gas projects – 1134 MW planned for Q4 2022; 609 MW planned for 2025; and 347 MW planned for 2027).

[28] *See* Seminole Electric Cooperative, *Ten-Year Site Plan 2022 - 2031 (Detail as of December 31, 2021)*, at 35 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Seminole%20Electric%20Cooperative.pdf.

"carbon dioxide"[29]—terms one would expect to be included in a document required to contain an evaluation of "[t]he anticipated environmental impact of each proposed electrical power plant site." Seminole's ten-year site plan does not evaluate the environmental or climate impacts that will result from the proposed natural gas plants' carbon dioxide ("CO_2") emissions, nor does the plan evaluate the environmental impacts relating to the plant's operation, such as the transport of natural gas to the plant via pipeline which carries risks of leaks or spills or the harmful methane that is emitted during the production and transport of the natural gas. The Florida Legislature made clear that these anticipated environmental impacts must be assessed by the PSC at the Ten-Year Site Plan stage, not only on a site-specific basis, such as when the PSC makes a determination of need for an electrical power plant under Fla. Stat. § 403.519.[30] It is unlawful for the PSC to read the requirement to assess anticipated environmental impacts out of the ten-year site plan statute.

In addition to these proposed sites, FPL's 2022 ten-year site plan notes that the utility plans to bring online a new 1,267 MW natural gas fired unit by the end of 2022 as part of a modernization of an existing facility.[31] FPL claims the modernization will result in a lower amount of natural gas used across FPL's system.[32] However, FPL's 2022 ten-year site plan does not address the environmental or climate impacts of this particular addition or revision, even if the plan does tout FPL's progress in reducing its overall carbon dioxide emissions and donating to environmental organizations.[33] While natural gas power plants do emit less carbon dioxide per megawatt hour than coal-fired power plants,[34] natural gas plants still emit on average 976 pounds of CO_2 per MWh, compared to 0 pounds of CO_2 per MWh for renewables and nuclear. Additionally, natural gas plants also contribute to additional, non-CO_2 pollution in the form of methane emissions from natural gas pipeline leaks and other leaks from natural gas-related infrastructure, none of which are assessed in the plans.[35]

Utilities' 2022 Ten-Year Site Plans Do Not Analyze Economically and Technologically Feasible Alternatives to Continued Natural Gas Dependence—Fla. Stat. § 186.801(2)(d)

The PSC is required to review "possible alternatives" to each utility's proposed plan under Fla. Stat. § 186.801(2)(d) and has the authority to suggest alternatives to utilities' plans

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[29] *See id.*
[30] *See* Fla. Stat. §§ 186.801(2)(c), 403.519(3) (PSC "shall be the sole forum for the determination [of need for an electrical power plant subject to the Florida Electrical Power Plant Siting Act.").
[31] Florida Power & Light Company, *Ten Year Power Plant Site Plan 2022 – 2031*, at 96 (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Florida%20Power%20and%20Light%20Company.pdf.
[32] *Id*. at 101.
[33] *Id*. at 283-84.
[34] U.S. Energy Info. Admin, *Electric Power Sector CO_2 Emissions Drop as Generation Mix Shifts from Coal to Natural Gas,* EIA.GOV (June 9, 2021), https://www.eia.gov/todayinenergy/detail.php?id=48296#:~:text=When%20generating%20electricity%2C%20coal%20emits,pounds%20of%20CO2%2FMWh.
[35] *See, e.g.,* Hannah Morse, *Why FPL's 'Clean' Power Plants are Ranked in Report Among Top Carbon Producers*, PALMBEACHPOST.COM (Mar. 28, 2022), https://www.palmbeachpost.com/story/news/local/2022/03/28/florida-power-light-plant-ranks-dirty-but-company-disputes-claim/7041464001/.

under Fla. Stat. § 186.801(2). While this statutory obligation applies to the PSC and not to the utilities, it is notable that only one utility—FPL—included an alternative forecast in its plan.[36] Even then, the differences between its "business as usual" and alternative plans were relatively minor – such as differences in absolute energy use to account for higher winter loads in anticipation of extreme weather events like the devastating 2021 winter storm in Texas.[37]

Otherwise, the utilities' 2022 ten-year site plans fail to consider or provide information to the PSC about feasible plan alternatives. Notably, though, both NextEra and Duke Energy, parent companies for FPL and DEF respectively, have announced goals to achieve significant emissions reductions by 2050, with interim goals of around 50% renewables by 2030.[38] These public goals, which as discussed below are inconsistent with FPL and DEF's 2022 ten-year site plans, indicate that major utilities are aware of alternatives to continued natural gas dependence. Where, as here, such plans run afoul of numerous aspects of Florida law—as well as fail to satisfy the utilities' own public decarbonization commitments—the PSC must find the utilities' plans to be "unsuitable."

Further, there is no question that economically and technologically feasible alternatives to continued natural gas dependence exist. In 2020, the energy modeling and consulting firm Evolved Energy Research ("EER") released a report detailing five technically and economically feasible pathways for Florida to decarbonize all sectors, including the electricity sector, by 2050, while keeping costs below the historical cost of energy in Florida under a business-as-usual approach.[39] Dr. Mark Jacobson, co-founder and Director of Stanford University's Atmosphere/Energy Program, has similarly determined that Florida could meet all of its energy needs with wind-water-solar supply while still keeping the grid stable 100% of the time, creating jobs, saving lives, and cutting emissions.[40] The PSC should review these alternative scenarios when assessing alternatives to the utilities' proposed plans.

Realizing alternative energy scenarios will require early investments in renewable energy infrastructure to harness Florida's abundant solar energy potential, as opposed to investments in new natural gas generation. This has become the obvious choice for Florida given the recent passage of the Inflation Reduction Act, which has been called "An Energy Transition 'Game

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[36] *See* Florida Power & Light Company, *Ten Year Power Plant Site Plan 2022 – 2031* (Apr. 1, 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Florida%20Power%20and%20Light%20Company.pdf.

[37] *Id.* at 93.

[38] *A Real Plan for Real Zero*, NextEra Energy, NEXTERAENERGY.COM, https://www.nexteraenergy.com/real-zero.html; *Duke Energy Expands Clean Energy Action Plan*, Duke Energy, NEWS.DUKE-ENERGY.COM (Feb. 9, 2022), https://news.duke-energy.com/releases/duke-energy-expands-clean-energy-action-plan.

[39] Ben Haley et al., Evolved Energy Research, *350 PPM Pathways for Florida* (Oct. 6, 2020), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5f7ff0f44a97c21b0c0d82c7/1602220328211/350+PPM+Pathways+Florida+Report.pdf.

[40] Mark Z. Jacobson et al., *Zero Air Pollution and Zero Carbon from All Energy Without Blackouts at Low Cost in Florida* (Dec. 7, 2021), https://web.stanford.edu/group/efmh/jacobson/Articles/I/21-USStates-PDFs/21-WWS-Florida.pdf. *See also* Mark Jacobson et al., *Zero Air Pollution and Zero Carbon from all Energy at Low Cost and Without Blackouts in Variable Weather Throughout the U.S. with 100% Wind-Water-Solar and Storage*, 184 Renewable Energy 430, 430-42 (2022), https://web.stanford.edu/group/efmh/jacobson/Articles/I/21-USStates-PDFs/21-USStatesPaper.pdf.

Changer'"[41] and a means "to accelerate decarbonization."[42] Duke Energy's CEO, Lynn Good, said, "The clean energy tax credits will lower our cost of service, which in turn reduces the cost to customers of our energy transition."[43] Florida utilities in their ten-year site plans, on the other hand, are still planning for new natural gas generating units that are not in the public interest, even though there are technically and economically feasible alternatives that do not contribute to climate change and will save Floridians money. This is equivalent to investing in land lines instead of cell phones. For example:

- DEF will add a new combustion turbine unit in 2029 that will have 214 MW of capacity;
- FPL will make various upgrades to its combined cycle unit at its existing Lauderdale power plant site in 2022;
- Lakeland Electric will add six Reciprocating Internal Combustion Engines (RICEs) for 120 MW of natural gas-generated capacity in 2024;
- Seminole Electric will add two combined cycle facilities and one combustion turbine facility in 2022, 2025, and 2027 respectively for over 2,000 MW of new natural gas generating capacity; and
- Tampa Electric will add natural gas projects in 2022, 2023, 2025, and 2028 for a total of five new units with a combined capacity of over 550 MW.[44]

In addition, many utilities have accounted for power purchase agreements that add natural gas capacity.[45] Utilities' 2022 ten-year site plans do not consider approaches to renewable energy generation at the necessary scale. Though many utilities tout their efforts and abilities to invest in solar and battery storage technologies, those promises must be viewed in the context of Florida's overwhelming reliance and dependence on natural gas. According to data from the Florida Reliability Coordinating Council, natural gas is projected to generate 171,226 GWh in 2021 and 185,330 GWh in 2030 while renewable energy sources are projected to generate only 15,392 GWh in 2021 and 41,656 GWh in 2030.[46] Renewable energy production is projected to increase linearly at about 2,802.6 GWh per year (99.99% certainty) whereas natural gas production is projected to increase linearly at about 1,482.5 GWh per year (99.97% certainty).[47]

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[41] Sidley Austin, LLP, Tax and Energy Update, *Inflation Reduction Act: Overview of Energy-Related Tax Provisions – An Energy Transition "Game Changer"* (Aug. 18, 2022), https://www.sidley.com/en/insights/newsupdates/2022/08/inflation-reduction-act-an-energy-transition-game-changer.

[42] Marianne Lavelle, *The New US Climate Law Will Reduce Carbon Emissions and Make Electricity Less Expensive, Economists Say*, Inside Climate News (Aug. 19, 2022), https://insideclimatenews.org/news/19082022/inflation-reduction-act-electricity-prices-carbon-reduction/?utm_source=InsideClimate+News&utm_campaign=604a0b954b-&utm_medium=email&utm_term=0_29c928ffb5-604a0b954b-327830353.

[43] *Id.*

[44] *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans (2022, Schedule 9 Tables).

[45] *See id.*

[46] Christina Rau, Florida Reliability Coordinating Council, *2021 Regional Load & Resource Plan FRCC-MS-PL-378 Version 2*, at S-18, Form 9.1 (2021), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2021/FRCC_RLRP.pdf.

[47] *Id.*

At these rates of increase, renewable energy production will not equal natural gas energy production until the year 2140. Taking almost five generations just to achieve parity between natural gas and renewable energy use represents an abject failure to capitalize on Florida's "significant solar energy potential" and to comply with Florida's explicit Renewable Energy Policy.[48] In the absence of analyses considering renewable alternatives to new fossil fuel infrastructure to meet projected future energy demand, the PSC should designate utilities' 2022 ten-year site plans as "unsuitable".

Utilities' 2022 Ten-Year Site Plans are Inconsistent with the State Comprehensive Plan—Fla. Stat. § 186.801(2)(f)

Section 186.801(2)(f), Florida Statutes, requires the PSC to review "the extent to which the [utility's] plan is consistent with the state comprehensive plan." The State Comprehensive Plan is unambiguous in its intent to reduce Florida's reliance on fossil fuels. The stated goal of the comprehensive plan regarding energy is that Florida "***shall*** reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources and low-carbon-emitting electric power plants."[49] Legislatively established policies include "promot[ing] the development and application of solar energy technologies and passive solar design techniques" and "promot[ing] the use and development of renewable energy resources and low-carbon-emitting electric power plants."[50] In addition, the Florida Legislature has declared policies to "improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment,"[51] and "encourage the use of alternative energy resources that do not degrade air quality."[52] Importantly, the Legislature has dictated that "Florida shall provide programs sufficient to protect the health, safety, and welfare of all of its children."[53] The PSC cannot continue to ignore these clear legislative directives.

The utilities say nothing about how their plans are consistent with these provisions of the State Comprehensive Plan. The PSC should designate utilities' 2022 ten-year site plans as "unsuitable" because the plans are facially inconsistent with the State Comprehensive Plan because they have no analysis as to how the plans will reduce atmospheric CO_2 nor do they explain how proposing an increase in natural gas use and development while simultaneously failing to adequately account for renewable energy alternatives is compliant with the State Comprehensive Plan. Nor do the plans explain how a fossil fuel dominated energy system protects the health, safety, and welfare of all of Florida's children, which is not surprising. Climate change has created a children's health crisis and "present and future generations of children bear and will continue to bear an unacceptably high disease burden from climate

[48] Fla. Stat. § 366.92.
[49] *See* Fla. Stat. § 187.201(11)(a).
[50] *See* Fla. Stat. §§ 187.201(11)(b)(7), (b)(9).
[51] *See* Fla. Stat. § 187.201(10)(b)(1).
[52] *See* Fla. Stat. § 187.201(10)(b)(4).
[53] *See* Fla. Stat. § 187.201(1)(a).

change."[54] Energy generation from natural gas expected by Florida's utilities hardly changes over the current ten-year period (i.e., 2022 to 2031). Though natural gas as a percentage of total energy generation may decrease by a few percentage points from 2022 to 2031, utilities' 2022 ten-year site plans collectively indicate that the total amount of energy (MW) coming from natural gas will increase from 2022 to 2031, which will in turn *increase* atmospheric levels CO_2 and *increase* the health harms being imposed on Florida's children.[55]

Utilities' 2022 Ten-Year Site Plans Violate Florida Renewable Energy Policy—Fla. Stat. § 366.92

The Florida Legislature clearly intends to drive a renewable energy transition in the state, as there are many environmental and economic reasons to do so, and the PSC's suitability determination should be guided with this intention in mind. In 2006, the Legislature adopted the Florida Renewable Energy Policy, which set forth the Legislature's intent to "diversify the types of fuel used to generate electricity," and "lessen Florida's dependence on natural gas and fuel oil for the production of electricity."[56] The PSC is charged with implementing Florida's Renewable Energy Policy.[57] Although the Renewable Energy Policy has been amended a number of times since 2006, the legislative intent provision has remained consistent and unchanged.[58]

In its previous suitability determinations, the PSC has both acknowledged its role in fulfilling that intent and recognized that Florida's utilities have failed to increase fuel diversity in the state.[59] In its 2005 and 2006 ten-year site plan review, the PSC observed the lack of fuel diversity for electricity generation and signaled that it would "continue to closely monitor the progress of Florida's utilities to increase fuel diversity within the state."[60] Yet, the PSC continues to violate the Florida Renewable Energy Policy by systematically finding electric utilities' ten-year site plans as suitable even though they lock-in decades of natural gas use and infrastructure. For example, in 2020, the PSC found each utility's ten-year site plans to be "suitable" because their "projects for load growth appear[ed] reasonable" and because "the reporting utilities ha[d] identified sufficient generation facilities to maintain an adequate supply of electricity at a reasonable cost."[61] The PSC found these plans to be "suitable" despite the fact that they

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[54] Daniel Helldén et al., *Climate Change and Child Health: A Scoping Review and an Expanded Conceptual Framework*, 5 Lancet Planet Health e164-75 (2021), https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196%2820%2930274-6/fulltext.
[55] *See Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans (2022).
[56] *See* Fla. Stat. §366.92(1).
[57] Fla. Stat. § 366.92(5) ("The commission may adopt rules to administer and implement the provisions of this section.").
[58] *Compare* Fla. Stat. § 366.92(1) *with* Ch. 2006-230, § 18, http://laws.flrules.org/files/Ch_2006-230.pdf.
[59] Fla. Pub. Serv. Comm'n, *Review of 2006 Ten-Year Site Plans for Florida Electric Utilities* 1 (Dec. 2006), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2006/tysp2006.pdf; *See also* Fla. Pub. Serv. Comm'n, *A Review of Florida Electric Utility 2005 Ten-Year Site Plans* 5 (Dec. 2005), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2005/tysp2005.pdf.
[60] *Id*.
[61] Fla. Pub. Serv. Comm'n, *Review of the 2020 Ten-Year Site Plans of Florida's Electric Utilities* 9 (Oct. 2020), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2020/Review.pdf.

collectively showed that utilities would continue to rely on natural gas for at least 60% of their electricity production needs every year through 2029.[62]

In 2021, the PSC again found each utility's plan suitable despite the fact that 73.3% of the electricity generated in 2020 was from natural gas, and that utilities continued to project a reliance on natural gas for at least 68% of generation through 2030, an increase over the previous year's projection for 2029.[63] Instead of regulating Florida's utilities in a manner that accords with the public interest and furthers the public welfare by pushing utilities to diversify their energy generation sources with more renewable sources—as the Legislature intended when it wrote the Florida Renewable Energy Policy—the PSC has, for years, rubber-stamped utilities' ten-year site plans that have steadily solidified a natural-gas fueled future. That approach is inconsistent with black letter Florida law.

Utilities' 2022 Ten-Year Site Plans Are Not Consistent with FDACS' Renewable Energy Goals—F.A.C. 5O-5.001–5O-5.004

In April 2022, Commissioner of Florida's Department of Agriculture and Consumer Services ("FDACS") Nikki Fried announced new goals to increase statewide renewable energy use in response to OCT and youth petitioners' request for rulemaking. The goals set out the science-based target of 100 percent renewable energy by 2050, with interim goals of 40 percent renewables by 2030; 63 percent by 2035; and 82 percent by 2040.[64] The rule requires utilities to report the amount of renewable energy produced and purchased each year through their ten-year site plans. FDACS must then annually review each utility's report to provide the PSC with comments on whether they will meet the renewable energy goals. FDACS' renewable energy goals became effective August 9, 2022.[65]

The utilities' 2022 ten-year site plans filed with the Commission in April of this year are inconsistent with achieving FDACS's renewable energy goals. By 2031, only one utility forecasts a renewable energy percentage (including solar, wind, biofuels, landfill gas, and nuclear) above 40 percent—Orlando Utilities Commission expects to derive 62.74% from renewables in 2031.[66] FPL's plan is close to the FDACS goals, with a forecast of 38.7%

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[62] *Id.* at 42 (Fig. 15).
[63] Fla. Pub. Serv. Comm'n, *Review of the 2021 Ten-Year Site Plans of Florida's Electric Utilities* 9, 38 (Oct. 2021), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2021/Review.pdf (Fig. 16).
[64] Press Release, Fla. Dep't of Ag. & Consumer Servs, VIDEO: Commissioner Nikki Fried Announces New Statewide Renewable Energy Goals, FDACS.GOV (Apr. 21, 2022), https://www.fdacs.gov/News-Events/Press-Releases/2022-Press-Releases/VIDEO-Commissioner-Nikki-Fried-Announces-New-Statewide-Renewable-Energy-Goals.
[65] *See* Fla. Dep't of State, *Florida Administrative Code & Florida Administrative Register*, FLRULES.ORG, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5O-5 (containing link to FDACS renewable energy goal rules, effective August 9, 2022. Codified at 5O-5.001 through 5O-5.004, Fla. Admin. Code).
[66] Orlando Utilities Commission, *2022 Ten-Year Site Plan* 12-12 (Apr. 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Orlando%20Utilities%20Commission.pdf.

renewables by 2031.[67] Every other utility's forecast falls far short of FDACS's renewable energy goals for 2030: Duke Energy Florida (22.2%), Florida Municipal Power Association (17.8%), Gainesville Regional Utilities (29.8%), JEA (0.6% renewables, 25% from unknown firm inter-region interchange sources), Lakeland Electric (4.4% renewables, 8.3% unknown purchases), Seminole Electric Cooperative (8.6% through firm interchange), City of Tallahassee Utilities (3.9%), and Tampa Electric Company (20.4%).[68]

As a regulatory requirement established by FDACS pursuant to its clear delegated statutory authority, the PSC has the responsibility to designate the utility ten-year plans that are inconsistent with this requirement as "unsuitable". Doing otherwise would contravene the Legislature's intent to have FDACS set renewable energy goals for the state of Florida.

Utilities' 2022 Ten-Year Site Plans Ignore City and County Renewable Energy Goals—Fla. Stat. § 186.801(2)(e)

Section 186.801(2)(e), Florida Statutes, requires that the PSC consider "[t]he views of appropriate local, state, and federal agencies . . ." as part of its review of utilities' ten-year site plans. In the past five years, cities and counties across Florida have taken strong stances on renewable energy, with many local governments unanimously passing resolutions committing to the science-based target of 100% renewable energy by 2050. Utilities' 2022 ten-year site plans ignore these goals and it is the PSC's responsibility to ensure that the plans are consistent with these locally derived objectives.

For instance, the City of Tallahassee established a goal in 2019 to transition to 100% renewables by 2050.[69] This goal includes all forms of energy across the Tallahassee community, and would "include the electric utility, natural gas utility and transportation."[70] In striking contrast, the City of Tallahassee Utilities' 2022 ten-year site plan forecasts nearly 100% of its energy will derive from natural gas in 2031, making it impossible for the City of Tallahassee to achieve its own goal.[71] Similarly, in 2018 the City Commission of Gainesville unanimously passed a resolution committing the city to 100% renewable electricity by 2045.[72] Yet the Gainesville Regional Utilities' 2022 site plan forecasts 70.6% of its electricity will be generated

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[67] Florida Power & Light Company, *Ten Year Power Plant Site Plan 2022-2031*, at 175, 177 (Apr. 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Florida%20Power%20and%20Light%20Company.pdf.

[68] *Ten-Year Site Plans*, Fla. Pub. Serv. Comm'n, PSC.STATE.FL.US, http://www.psc.state.fl.us/ElectricNaturalGas/TenYearSitePlans (2022, *see* Schedule 6.2 Tables).

[69] City of Tallahassee, *A Resolution of the City Commission of the City of Tallahassee, Florida, Supporting 100% Clean Renewable Energy for our Community*, Resolution No. 19-R-04 (adopted Feb. 20, 2019), https://www.boarddocs.com/fla/talgov/Board.nsf/files/B9KTU963E005/$file/Clean%20Energy%20Resolution.pdf.

[70] City of Tallahassee Electric System Integrated Planning, *City of Tallahassee Utilities Ten Year Site Plan 2022-2031*, at 47 (Apr. 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/City%20of%20Tallahassee.pdf.

[71] *Id*. at 38.

[72] City of Gainesville, *A Resolution of the City Commission of the City of Gainesville, Florida, Establishing a Goal of Providing 100 Percent of the City's Energy from Renewable Resources by 2045*, Resolution No. 180442 (adopted Oct. 18, 2018), https://gainesville.legistar.com/LegislationDetail.aspx?ID=3697405&GUID=3CD4A873-4D4C-4F5E-B635-CFE99D412BF3.

from natural gas in 2031, a nearly 20% increase from 2021.[73] The PSC should find these 2022 site plans "unsuitable" because they thwart the specific goals of local governments across Florida.

Utilities' 2022 Ten-Year Site Plans are Inconsistent with Utilities' Own Public Plans for Decarbonization

NextEra, FPL's parent company, and Duke Energy, DEF's parent company, have both made public decarbonization commitments consistent with current climate science and the FDACS renewable energy goals. On June 14, 2022, NextEra announced its plan to reach "Real Zero," defined as achieving zero carbon-emissions without the use of carbon offsets, by 2045.[74] The announcement also detailed interim goals specific to NextEra's FPL operations: 36% decarbonization by 2025, 52% by 2030, 62% by 2035, 83% by 2040, and 100% by 2045.[75] NextEra's plan considers renewable natural gas as a renewable fuel, but only for "reliability purposes."[76]

In contrast with these ambitious goals, FPL's 2022 ten-year site plan indicates that the utility is not on track to meet the Real Zero goal. FPL's plan predicts that in 2031 renewables will makeup 38.6% of all generation, creating a 13.4% deficit on its 2030 interim goal of 52% decarbonization and a 23.3% gap with its 2035 interim goal of 62% decarbonization.

In 2019, Duke Energy announced comparable goals – committing to reach net-zero by 2050 with an interim goal of a 50% reduction of emissions from 2005 levels by 2030.[77] Unlike with NextEra and FPL, Duke Energy has not announced specific targets for DEF, but notably DEF's 2022 site plan is well behind the company's nationwide decarbonization commitments. DEF's 2022 ten-year site plan forecasts that DEF's energy generation will become increasingly reliant on fossil fuels through 2031, when 74.3% of generation will come from natural gas.[78]

These differences represent major discrepancies between utilities' public commitments and their 2022 ten-year site plans. Importantly, the public announcements reveal that Florida's

[73] Gainesville Regional Utilities, *2022 Ten-Year Site Plan* 36 (Apr. 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Gainesville%20Regional%20Utilities.pdf.
[74] *A Real Plan for Real Zero*, NextEra Energy, NEXTERAENERGY.COM, https://www.nexteraenergy.com/real-zero.html; *Duke Energy Expands Clean Energy Action Plan*, Duke Energy, NEWS.DUKE-ENERGY.COM (Feb. 9, 2022), https://news.duke-energy.com/releases/duke-energy-expands-clean-energy-action-plan.
[75] Press Release, NextEra Energy, *NextEra Energy Sets Industry-Leading Real Zero Goal to Eliminate Carbon Emissions from its Operations, Leverage Low-Cost Renewables to Drive Energy Affordability for Customers*, NEXTERAENERGY.COM (June 14, 2022), https://newsroom.nexteraenergy.com/2022-06-14-NextEra-Energy-sets-industry-leading-Real-Zero-TM-goal-to-eliminate-carbon-emissions-from-its-operations,-leverage-low-cost-renewables-to-drive-energy-affordability-for-customers.
[76] *Id*.
[77] *Duke Energy Aims to Achieve Net-Zero Carbon Emissions by 2050*, Duke Energy, NEWS.DUKE-ENERGY.COM (Sept. 17, 2019), https://news.duke-energy.com/releases/duke-energy-aims-to-achieve-net-zero-carbon-emissions-by-2050.
[78] Duke Energy Florida, *Duke Energy Florida, LLC Ten-Year Site Plan* 2-30 (Apr. 2022), http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/TenYearSitePlans/2022/Duke%20Energy%20Florida.pdf.

two largest utilities are aware of and have committed to pursuing alternatives to a natural gas-dependent future. These commitments should be applauded and supported by the PSC. However, based on their 2022 ten-year site plans, it appears that FPL and DEF are publicly saying one thing and privately proposing another. The PSC is responsible for furthering the public's interest and welfare in its regulation of Florida's public utilities and should hold the utilities accountable for their own public pronouncements. Accordingly, the PSC should weigh these public announcements against these utilities' ten-year site plans when evaluating the plans' suitability. The clear economic and technical feasibility of achieving a100% renewable energy system in Florida by at least 2050 should therefore weigh heavily on the PSC's analysis of whether utilities' (and not just DEF and FPL) 2022 ten-year site plans are unsuitable.

Conclusion

Since as early as 2006, Florida law has made clear its vision to transition the state away from fossil fuel reliance towards a clean energy future. Florida's young people have asked for strong, science-based goals to make the renewables transition a reality, and FDACS has listened. Local governments across the state have shown unambiguous support for reaching 100% renewable electricity generation by 2050. A handful of utilities themselves have made public commitments to such goals, and experts have time and again highlighted the economic and technological feasibility of attaining these targets. Yet, Florida's utilities' 2022 ten-year site plans submitted to PSC for review paint a much different picture of Florida's energy future—one where natural gas continues to dominate energy generation for at least the next decade, causing dangerous climate-changing effects, harming children's health, and jeopardizing the continued existence of Florida's treasured coastlines.

Florida lies at ground zero in terms of climate change impacts, with children most at risk. The Florida Legislature long ago declared the regulation of public utilities "to be in the public interest" and "an exercise of the police power of the state for the protection of the public welfare."[79] Here, the public interest and public welfare demand that PSC cease its regulatory "rubber-stamping" of utilities' ten-year site plans as "suitable," and find each utility's 2022 ten-year site plan to be "unsuitable" for the reasons detailed herein. The utilities should be provided with specific direction as to what is required for the plans to comply with all of the legal requirements specified herein. OCT greatly appreciates PSC's consideration of this letter and hopes this information helps inform the PSC's ongoing review of utilities' 2022 ten-year site plans. We would appreciate an acknowledgement and response to this letter at your convenience, and are happy to meet with you to discuss any of its contents.

Sincerely,

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[79] Fla. Stat. § 366.01.

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