Stephanie A. Cuello
SENIOR COUNSEL

May 1, 2024

VIA ELECTRONIC DELIVERY

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

Re: *2024 Ten-Year Site Plan Data Request #1; Undocketed*

Dear Mr. Teitzman:

Please find enclosed for filing, Duke Energy Florida, LLC's Response to Staff's Data Request #1, questions 3 through 100, issued on March 19, 2024, regarding DEF's 2024 TYSP. An Amended Response to Staff's Data Request 1, questions 1-2 was filed electronically on April 22, 2024, document no.: 02243-2024.

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

Sincerely,

/s/ Stephanie A. Cuello

Stephanie A. Cuello

SAC/clg
Attachments

cc: Greg Davis, GDavis@psc.state.fl.us, Division of Engineering, FPSC
Phillip Ellis, PEllis@psc.state.fl.us , Division of Engineering, FPSC

DEF's Response to Staff's Data Request Regarding the 2024 Ten Year Site Plan; Questions 3-100

Instructions: Accompanying this data request is a Microsoft Excel (Excel) document titled "Data Request #1.Excel Tables," (Excel Tables File). For each question below that references the Excel Tables File, please complete the table and provide, in Excel Format, all data requested for those sheet(s)/tab(s) identified in parenthesis.

General Items

3. Please refer to the Excel Tables File (Financial Assumptions, Financial Escalation). Complete the tables by providing information on the financial assumptions and financial escalation assumptions used in developing the Company's TYSP. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.

RESPONSE:

Please see tables below and tabs *Financial Assumptions and Financial Escalation* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables:*

Financial Assumptions Base Case		
AFUDC RATE		8.17%
CAPITALIZATION RATIOS:		
	DEBT	47%
	PREFERRED	
	EQUITY	53%
RATE OF RETURN		
	DEBT	6.0%
	PREFERRED	
	EQUITY	10%
INCOME TAX RATE:		
	STATE	5.50%
	FEDERAL	21%
	EFFECTIVE	25.35%
OTHER TAX RATE:		
DISCOUNT RATE:		7.45%
TAX		
DEPRECIATION RATE:		
(1)		
for CT:	15 Years (MACRS Table)	
for CC:	20 Years (MACRS Table)	
for Solar and SPS:	5 Years (MACRS Table)	
for Battery:	5 Years (MACRS Table)	

Financial Escalation Assumptions				
	General	Plant Construction	Fixed O&M	Variable O&M
	Inflation	Cost [(1)]	Cost	Cost
Year	%	%	%	%
2024	2.50%		2.5%	2.5%
2025	2.50%		2.5%	2.5%
2026	2.50%		2.5%	2.5%
2027	2.50%		2.5%	2.5%
2028	2.50%		2.5%	2.5%
2029	2.50%		2.5%	2.5%
2030	2.50%		2.5%	2.5%
2031	2.50%		2.5%	2.5%
2032	2.50%		2.5%	2.5%
2033	2.50%		2.5%	2.5%
(1)	Long Term Escalation Rates			
	Combustion Turbine		1.49%	
	Combined Cycle		1.61%	
	Solar		1.04%	
	Solar Plus Storage		0.95%	
	Battery		0.50%	

Load & Demand Forecasting

Historic Load & Demand

4. **[Investor-Owned Utilities Only]** Please refer to the Excel Tables File (Hourly System Load). Complete the table by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank.

    a. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time (March 12, 2023, to November 5, 2023).

    RESPONSE:

    a. For March DST, there is a zero in hour 3. For November DST, DEF computes the average for hours 2 and hour 3 and places it in hour 2 as hour 3 is shifted back to hour 2.

5. Please refer to the Excel Tables File (Historic Peak Demand). Complete the table by providing information on the monthly peak demand experienced during the three-year period prior to the

current planning period, including the actual peak demand experienced, the amount of demand response activated during the peak, and the estimated total peak if demand response had not been activated. Please also provide the day, hour, and system-average temperature at the time of each monthly peak.

RESPONSE:

Please see table below and tab *Historic Peak Demand* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables:*

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2023	1	7,840	0	7,840	16	8	51.043
	2	6,657	0	6,657	23	17	75.15
	3	7,608	0	7,608	27	18	77.93
	4	7,845	0	7,845	4	18	77.68
	5	8,354	0	8,354	11	17	80.62
	6	9,322	0	9,322	27	18	85
	7	9,725	0	9,725	21	17	87.03
	8	10,268	0	10,268	11	18	87.56
	9	9,281	0	9,281	11	18	83.71
	10	7,859	0	7,859	13	17	80.98
	11	6,799	0	6,799	11	16	75.53
	12	5,936	0	5,936	3	15	74.28
2022	1	9,240	0	9,240	30	8	45.1195
	2	7,539	0	7,539	1	8	57.8125
	3	7,003	0	7,003	18	18	73.6455
	4	7,905	0	7,905	6	18	79.3675
	5	8,743	0	8,743	23	17	81.55
	6	9,977	0	9,977	15	17	84.79
	7	9,799	0	9,799	29	17	83.9575
	8	9,848	0	9,848	1	17	84.1275
	9	9,306	0	9,306	6	17	84.167
	10	7,956	0	7,956	11	17	78.4835
	11	7,811	0	7,811	1	17	77.5835
	12	9,157	0	9,157	25	9	38.36
2021	1	7,052	0	7,052	19	8	45.2
	2	8,308	0	8,308	4	8	43.05
	3	7,565	0	7,565	31	17	86.25
	4	7,871	0	7,871	29	18	86.9
	5	8,735	0	8,735	5	18	87.5
	6	9,147	0	9,147	11	17	92.55
	7	9,452	0	9,452	22	17	89.7
	8	9,681	0	9,681	19	17	94.1
	9	8,770	0	8,770	13	17	87.55
	10	8,701	0	8,701	7	17	87.95
	11	6,198	0	6,198	3	17	81.4
	12	6,210	0	6,210	31	17	79
Notes							
(Include Notes Here)							

Forecasted Load & Demand

6. Please identify the weather station(s) used for calculation of the system-wide temperature for the Company's service territory. If more than one weather station is utilized, please describe how a system-wide average is calculated.

   RESPONSE:

   DEF uses dry bulb temperature readings from three weather stations - St Petersburg (45%), Orlando (45%) and Tallahassee (10%), weight included in parenthesis.

   Weather station weightings are developed using "weather-sensitive" energy sales by customer building types reported by eighteen individual Operation Centers located around the service area. Energy sales by Operation Centers are grouped to its closest weather station to determine weather station weights.

7. Please explain, to the extent not addressed in the Company's current planning period TYSP, how the reported forecasts of the number of customers, demand, and total retail energy sales were developed. In your response, please include the following information:

   - Methodology.
   - Assumptions.
   - Data sources.
   - Third-party consultant(s) involved.
   - Anticipated forecast accuracy.
   - Any difference/improvement(s) made compared with those forecasts used in the Company's most recent prior TYSP.

   RESPONSE:

   - Methodology.
     Please refer to the DEF 2024 TYSP.

   - Assumptions.
     Please refer to the DEF 2024 TYSP.

   - Data sources.
     Please refer to the DEF 2024 TYSP.

   - Third-party consultant(s) involved.
     No third-party consultants involved.

   - Anticipated forecast accuracy.

As in every published DEF Load Forecast, the use of "most recently available" economic projections from a most-reliable source has been employed. Also, every TYSP Base Case planning projection is designed to result in a 50/50 probability of outcome.

- Any difference/improvement(s) made compared with those forecasts used in the Company's most recent prior TYSP.
  N/A

8. Please identify all closed and open Florida Public Service Commission (FPSC) dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's current planning period TYSP.

RESPONSE:

- Fuel and purchased power cost recovery clause with generating performance incentive factor (Docket No. 20240001-EI)
- Storm Protection Plan Cost Recovery Clause 2025 Projection Filings (Docket 20240010-EI)
- Petition for approval of amended standard offer contract (Docket No. 20240048-EQ)

9. Please explain if your Company evaluates the accuracy of its forecasts of customer growth and annual retail energy sales presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

   a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

   b. If your response is negative, please explain.

RESPONSE:

DEF maintains annual Forecast Evaluation Tables reflecting projection accuracy for all previous TYSP projections from 2003 to 2023 for Net Energy for Load (NEL), System Customers, System MW and Retail MW. Each previous projection's ten-year forecast horizon is compared to all existing comparable historical data-to date. For NEL and Customer data, reported actual company data is compared to projection. For System and Retail MW, both actual and forecast Summer and Winter MW peaks are evaluated on a comparable basis assuming no activated demand response. See attached file *TYSP Error Fan_2024.xlsx*.

10. Please explain if your Company evaluates the accuracy of its forecasts of Summer/Winter Peak Energy Demand presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

    a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

    b. If your response is negative, please explain why.

    <u>RESPONSE:</u>

    Please refer to response to Q9 and the corresponding Excel file.

    a. DEF prepared a forecast comparison of the past Ten-Year Site Plan forecasts from 2003 to 2023 as compared to the history. Variance calculation of (History / Forecast) are calculated across history and the TYSPs. This is the "TYSP Error Fan" in excel spread sheet form. The calculations compare the forecasts of Net Energy for Load, System Customers, Retail Peak Load and System Peak Load. Annual forecasts are compared for Net Energy for Load and System Customers and season forecasts are compared for Retail Peak Load and System Load.

11. Please explain any historic and forecasted trends or other information as requested below in each of the following:

    a. Growth of customers, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

    b. Average KWh consumption per customer, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

    c. Total Sales (GWh) to Ultimate Customers, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

    d. Provide a detailed discussion of how the Company's demand-side management program(s) for each customer type (residential, commercial, industrial) impact the observed trends in gigawatt hour sales (Schedule 3.3).

    <u>RESPONSE:</u>

a. DEF customer growth has always been dominated by the Residential and Commercial customer classes. Customer growth trends are driven by broad economic and demographic trends. These generic trends are typically covered in each years' assumptions section of the DEF's TYSP. Items such as population growth, population migration, and retirement demographic trends determine customer growth. Housing market issues such as affordability, mortgage rates, and job growth have always applied a significant influence on customer growth dynamics as well. More recent site plans reflect a return to the long-term trend of population migration into Florida. Commercial customer growth typically tracks residential growth, supplying needed services.

   One anomalous period of importance now buried in the middle of the error fan time horizon was the U.S. financial crisis. The severe financial crisis in the 2008-2010 timeframe caused many homeowners to lose substantial equity and in some cases their homes. This severely limited both retirees and other movers from migrating to Florida for a period. Negative forecast variances can be seen in the "System Customers" tab of the "error fan" all the way through projections made between 2003-2009 for the years 2009-2017.

   There are no projections of future wars, pandemics, or abnormal weather events embedded in the customer growth forecast.

b. Residential and commercial class per customer usage are driven, primarily, by fluctuations in electric price, end use appliance saturation, changing (improving) end use appliance efficiency, improved building codes, housing type/building size, and space conditioning equipment fuel type. More recently, the 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 generation, reducing kWh consumption from the power grid. Similarly, residential and some commercial accounts have reduced their utility requirements by installing solar panels behind their meter. Contrarily, the penetration of plug-in electric vehicles has grown, leading to an increase in residential use per customer, all else being equal. Each of these stated items are handled either implicitly in the economic scenario presented by Moody's Analytics or explicitly in the internal DEF projections of UEE, Solar PV and plug-in Electric Vehicles.

c. Total Sales to Ultimate Customers GWh are made up of retail sales which include residential, commercial, industrial, street lighting, and other sales to public authorities. Trends impacting the customer classes that make up retail sales are typically covered in each years' assumptions section of the DEF's TYSP.

   Major historical factors that impacted total retail sales include the Great Recession and the Covid Pandemic as well as drivers such as population growth, home construction, employment, income, GDP, electric prices, energy efficiency, and demand side management programs.

   Currently, along with the aforementioned drivers, the 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 generation, reducing kWh consumption from the power grid.

More significantly, residential and some commercial accounts have reduced their utility requirements by installing solar panels behind their meter. Contrarily, the penetration of plug-in electric vehicles has grown, leading to an increase in residential use per customer, all else being equal. High inflation and the resulting rise of the federal funds rate is also impacting economic drivers. Each of these stated items are handled either implicitly in the economic scenario presented by Moody's Analytics or explicitly in the internal DEF projections of UEE, Solar PV and plug-in Electric Vehicles.

For the forecast period, behind the meter generation is expected to continue to increase along with a smaller near-term rate of electric vehicle adoption. Expectations of lower economic growth due to lagged effects from monetary and fiscal policy updates impact the forecast in the short term however, there are no predictions for a recession.

d. Demand-side management program(s) and conservation/energy-efficiency program(s) continue to contribute to load reductions in the forecast period. As customers adopt these programs it is assumed that adoption will eventually plateau. This can be observed in the commercial/industrial class. Residential conservation continues to grow during the forecast period albeit by a lower rate than the previous 10 years.

12. Please explain any historic and forecasted trends in each of the following components of Summer/Winter Peak Demand:

   a. Demand Reduction due to the Company's demand-side management program(s) and Self Service, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

   b. Demand Reduction due to Demand Response, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

   c. Total Demand, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

   d. Net Firm Demand, by the sources of peak demand appearing in Schedule 3.1 and Schedule 3.2 of the current planning period TYSP, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

RESPONSE:

a. Conservation (utility-sponsored and "naturally occurring" appliance efficiency & building code improvements) and self-generation are primary contributors to the long-term trends in lower energy use per customer and resulting reductions in the growth of the peak demand. Stricter building codes and improved heating/cooling (as well as other) equipment efficiencies have been a steady and effective way to reduce the growth in

Summer/Winter peak for all classes of customers. The forecast projects continuing improvement as newer homes and newer appliances replace older, less efficient homes and appliances. DEF's conservation programs incentivize customers to purchase heating/cooling equipment at a level just above the required Federal Standards. In addition to conservation measures, customers in several different customer classes have installed "behind-the-meter" solar generation and more are projected to in the forecast. DEF has experienced a slight increase in installations of small gas turbines on-site of a paper manufacturer and a large hospital. If natural gas remains cheap and plentiful, we can expect to see more.

b. DEF commercial/industrial Demand Response program interest continues to increase due to observed customer load levels and economic conditions. This trend is expected to follow forecasted load growth.

   Residential capability growth has largely followed commission approved plans with the exception of during the COVID 19 pandemic when DEF temporarily suspended entering customer homes and when load control device deliveries were interrupted by supply chain constraints.

c. Please see response to Q11. Most factors that impact levels of "energy" have similar effects for energy at time of peak.

d. Please see response to Q11. Most factors that impact levels of "energy" have similar effects for energy at time of peak.

13. **[FEECA Utilities Only]** Do the Company's energy and demand savings amounts reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2, and 3.3 reflect the Company's proposed goals in the 2024 FEECA Goalsetting dockets? If not, please explain what assumptions are incorporated within those amounts, and why.

<u>RESPONSE:</u>

No. DEF continued the use of the assumptions based on the 2019 direction from the Commission. DEF has assumed that the programs will continue in the same general trend as established in the goals established for 2019-2024, which were continued from 2014. Beginning with 2025, DEF are sets values calculated as 90% of the last five-year average of annual incremental values. These values are then added to the accumulative 2024 forecast and so on for each year after that.

At the time of the development of the 2024 TYSP, the data from the proposed goals was not available. DEF does not anticipate approval of a particular set of goals by the Commission.

14. Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the following, respectively:

    a. Summer Peak Demand.

    b. Winter Peak Demand.

    c. Annual Retail Energy Sales.

    RESPONSE:

    In the ten-year period beginning in 2013 there have been no significant non-weather changes or anomalies impacting DEF's Summer/Winter Peak MW demand. General trends impacting the demand have continued over the ten-year period. DEF's service to wholesale jurisdictional demand and energy continues to be a declining share of total company Summer Peak, Winter Peak, and NEL. Secondly, seasonal peak demand continues to be affected by more efficient end-use appliances and lighting.

    The most significant non-weather impact on DEF load and demand is only beginning to be felt and is reflected more in the forecast than the historic trend data and that is the broader saturation of self-generation particularly rooftop solar PV. Impacts of customer owned generation have been modest thus far, but the trend of increasing adoption indicates that there will be significant and growing impacts especially to the annual energy sales in the near future.

15. Please provide responses to the following questions regarding the weather factors considered in the Company's retail energy sales and peak demand forecasts:

    a. Please identify, with corresponding explanations, all the weather-related input variables that were used in the respective Retail Energy Sales, Winter Peak Demand, and Summer Peak Demand models.

    b. Please specify the source(s) of the weather data used in the aforementioned forecasting models.

    c. Please explain in detail the process/procedure/method, if any, the Company utilized to convert the raw weather data into the values of the model input variables.

    d. Please specify with corresponding explanations:

        i. How many years' historical weather data was used in developing each retail energy sales and peak demand model.

        ii. How many years' historical weather data was used in the process of these models' calibration and/or validation.

e. Please explain how the projected values of the input weather variables (that were used to forecast the future sales or demand outputs for each planning years 2024 – 2033) were derived/obtained for the respective retail sales and peak demand models.

RESPONSE:

Please refer to the DEF 2024 TYSP.

16. **[Investor-Owned Utilities Only]** If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:

a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.

b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.

c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.

d. Schedule 3.1 - History and Forecast of Summer Peak Demand.

e. Schedule 3.2 - History and Forecast of Winter Peak Demand.

f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.

g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

RESPONSE:

Please refer to the DEF 2024 TYSP.

17. Please address the following questions regarding the impact of all customer-owned/leased renewable generation (solar and otherwise) and/or energy storage devices on the Utility's forecasts.

a. Please explain in detail how the Utility's load forecast accounts for the impact of customer's renewables and/or storage.

b. Please provide the annual impact, if any, of customer's renewables and/or storage on the Utility's retail demand and energy forecasts, by class and in total, for 2024 through 2033.

c. If the Utility maintains a forecast for the planning horizon (2024-2033) of the number of customers with renewables and/or storage, by customer class, please provide.

RESPONSE:

a. Existing customer owned renewable generation is captured in the historical dataset used for load forecast modeling. The projected impact of future customer owned renewable generation is added to the base load forecast as a reduction to load.

b. Annual impact, if any, of customer-owned/leased renewable generation (solar and otherwise) on the Utility's retail demand and energy forecasts, by class and in total, for 2024 through 2033. The "existing customer owned renewable generation is captured in the historical dataset used for load forecast modeling" – as such, the energy and demand data as presented represents "net new" as of 1/1/2024 and is a cumulative view from that point.

Please see tables below and tab *Customer Own-Leased Renew Gen* of the attached Excel File *2024 TYSP Data Request #1 – Excel Tables_Q17*.

Year	Cumulative Customer Owned/Leased Renewable Generation											
	Residential Energy Impact (MWh)	Commercial Energy Impact (MWh)	Industrial Energy Impact (MWh)	Total Energy Impact (MWh)	Residential Summer Demand (MW)	Residential Winter Demand (MW)	Commercial Summer Demand (MW)	Commercial Winter Demand (MW)	Industrial Summer Demand (MW)	Industrial Winter Demand (MW)	Total Summer Demand (MW)	Total Winter Demand (MW)
2024	(176,088)	(5,107)	(364)	(181,558)	(31)	(0)	(1)	(0)	(0)	0	(32)	(0)
2025	(524,422)	(15,305)	(1,046)	(540,773)	(80)	(2)	(2)	(0)	(0)	(0)	(83)	(2)
2026	(888,692)	(25,789)	(1,725)	(916,207)	(131)	(4)	(4)	(0)	(0)	(0)	(135)	(4)
2027	(1,266,976)	(36,867)	(2,401)	(1,306,245)	(184)	(6)	(5)	(0)	(0)	(0)	(190)	(6)
2028	(1,590,454)	(46,199)	(3,080)	(1,639,733)	(225)	(8)	(7)	(0)	(0)	(0)	(232)	(8)
2029	(1,800,434)	(52,437)	(3,742)	(1,856,613)	(255)	(9)	(8)	(0)	(1)	(0)	(263)	(9)
2030	(2,022,002)	(58,717)	(4,408)	(2,085,127)	(286)	(10)	(8)	(0)	(1)	(0)	(295)	(10)
2031	(2,255,077)	(65,530)	(5,070)	(2,325,677)	(318)	(11)	(9)	(0)	(1)	(0)	(328)	(11)
2032	(2,500,119)	(72,843)	(5,742)	(2,578,704)	(352)	(12)	(10)	(0)	(1)	(0)	(363)	(13)
2033	(2,722,581)	(79,291)	(6,385)	(2,808,257)	(383)	(13)	(11)	(0)	(1)	(0)	(395)	(14)
Notes												
The negative values indicate that customer owned PV is a reduction to projected load												

c. Forecast for the planning horizon (2024-2033) of the number of customers with customer-owned/leased renewable generation (solar and otherwise), by customer class, please provide. The data represents a cumulative view of all customers, including those that added renewable generation prior to 1/1/2024.

Please see table below and tab *Customer Own-Leased Renew Cust* of the attached Excel File *2024 TYSP Data Request #1 – Excel Tables_Q17*.

Year	Cumulative Customer Owned/Leased Renewable Generation Counts			
	Residential Customers	Commercial Customers	Industrial Customers	Total Customers
2024	120,710	944	3	121,657
2025	146,751	1,076	5	147,832
2026	174,060	1,217	7	175,284
2027	202,323	1,361	9	203,693
2028	220,209	1,454	11	221,674
2029	236,573	1,538	13	238,124
2030	253,789	1,623	15	255,427
2031	271,921	1,719	17	273,657
2032	290,055	1,815	19	291,889
2033	306,961	1,899	21	308,881
Notes				
Historical non-residential data not distinguished between commercial and industrial - assumed all commercial				

Plug-in Electric Vehicles (PEVs)

18. Please discuss whether the Company included plug-in electric vehicle (PEV) loads in its demand and energy forecasts for its current planning period TYSP. If so, how were these impacts accounted for in the modeling and forecasting process?

    a. Has the Company also included the impact of demand response and time of use rates for the PEV loads? If so, please provide the impact of these measures. If not, please explain why not.

RESPONSE:

Yes, PEV loads were included in the Company's demand and energy forecasts for the TYSP. Load from existing PEVs was captured in the historical dataset used by load forecast modeling. Projected load from future PEVs was added to the base load forecast as a positive load modifier.

a. Time of Use Rates (TOU rates) are a type of Demand Response (DR), and neither is included in the EV forecast at this time. Duke Energy has been working with the EV forecasting tool vendor to incorporated TOU rates in the EV forecast and as these processes and technologies become established, approved, and impactful they will be used in the future EV forecasts.

19. Please discuss with detail any changes or modifications from the Company's previous TYSP report regarding the following PEV related topics:

a. The major drivers of the Company's PEV growth.

b. The methodology and the assumptions (or, if applicable, the source(s) of the data) used to estimate the number of PEVs operating in the Company's service territory and the methodology used to estimate the cumulative impact on system demand and energy consumption.

c. The Company's process for monitoring the installation of PEV public charging stations in its service area.

d. The processes or technologies, if any, that are in place to allow the Company to be notified when a customer has installed a PEV charging station in their home.

e. Any instances since January 1 of the year prior to the current planning period in which upgrades to the distribution system were made where PEVs were a contributing factor.

RESPONSE:

a. The major drivers of PEV growth have been similar the last few years. Such drivers include but are not limited to: PEV cost projections and cost parity with ICE vehicles in the near future, additional models available for purchase, increased charging infrastructure, regulatory support, and increased consumer support.

b. The Company continues to use a tool developed by Guidehouse called Vehicle Analytics and Simulation Tool (VAST) to develop the forecast for the number of PEVs operating in its service territory and the potential loading impacts to system demand and energy. VAST includes an EV Adoption Module which uses multiple variables (registration data, fuel costs, vehicle availability, vehicle miles traveled, MSRP values, etc.) to develop vehicle forecast scenarios. This Adoption Module feeds the EV Charging Needs Module and Load Impacts Module which uses additional variables (vehicle per charger ratio, daily traffic data, vehicle charging profiles, etc.) to develop the impact on system demand and energy consumption.

c. The Company monitors PEV public charging stations through the U.S. Department of Energy Alternative Fuels Data Center (https://afdc.energy.gov). VAST also uses AFDC data as an input to monitor the installation of PEV charging stations.

d. At this time, the Company knows with certainty that a customer has installed an EV charger only when the customer participates in one of the Company's active EV programs. It is otherwise very rare, especially in residential settings, that a customer notifies the Company when installing an EV charger. The deployment of advanced metering infrastructure (AMI) has enabled the company over time to potentially identify and detect probable L2 EV charging loads when doing analyses comparing historical load data trends to current load data trends.

e. The Company is not aware of any upgrades to the distribution system since 1/1/2023 that would be specifically attributable to PEV loads. Distribution system upgrades often result from a combination of factors and determining the existence and contribution of a single source such as PEV loads would be challenging.

20. Please refer to the Excel Tables File (Electric Vehicle Charging). Complete the table by providing estimates of the requested information within the Company's service territory for the current planning period. Direct current fast charger (DCFC) PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

    a. Please describe all significant technological, market, regulatory, or other events or announcements since the filing of the Company's 2023 TYSP which have impacted the metrics reported.

    b. Please explain if and how the tax incentives and grants for transportation electrification associated with the IRA, adopted in August 2022, has impacted the Company's PEV and PEV charging station adoption/installation, as well as the PEV energy/demand forecast(s). If the provisions of the IRA are not reflected in such forecasts, please explain why.

RESPONSE:

Please see table below and tab *Electric Vehicle Charging* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public DCFC PEV Charging Stations.	Cumulative Impact of PEVs		
				Summer Demand (MW)	Winter Demand (MW)	Annual Energy (GWh)
2024	68,488	1,905	543	14	0	50
2025	104,185	2,498	703	34	3	143
2026	157,228	3,246	896	63	8	286
2027	234,412	4,209	1,134	106	16	496
2028	339,524	5,395	1,411	164	28	792
2029	474,718	6,819	1,723	293	45	1,183
2030	636,557	8,450	2,058	331	67	1,663
2031	822,895	10,311	2,431	531	96	2,221
2032	1,029,188	12,397	2,848	669	131	2,846
2033	1,242,094	14,574	3,281	809	171	3,506

Notes
1. Source: Fall 2023 EV Forecast
2. "Number of PEVs" total cumulative PEV vehicles which includes includes Light, Medium, and Heavy Duty Vehicles.
3. "Cumulative Impact of PEVs" includes only net-new vehicles beginning January 2024 as used and provided to load forecasting. This includes energy impacts from light, medium, and heavy duty vehicles (energy is from 1/1/2024).
4. "Number of Public PEV charging stations" includes both L2 and DC charging stations
5."Cumulative Impact of PEV's at the system's coincident peak for Summer and Winter.

a. Since the filing of the Company's 2023 TYSP, primary impacts from significant technological, market, regulatory, or other events include (1) Inflationary pressures driving the cost of EVs to be higher in the near term, but long-term subsiding (2) Raw material and supply chain costs fluctuating due to macroeconomic conditions (3) positive regulatory and consumer tailwinds resulting in increased EV adoptions (inclusion of the IRA in this forecast compared to previous).

b. The IRA has had a positive impact to EV adoption and growth in addition to EV charging stations. One of the driving factors in adoptions is cost, and if certain criteria is met, the IRA allows for reduced cost which ultimately will lead to additional adoptions. The IRA (or other policy incentives) isn't a direct input in models but have shown to have positive impacts to numerous variables that impact the total cost of ownership calculation and installation/purchase costs.

21. Please describe any Company programs or tariffs currently offered to customers relating to PEVs, and describe whether any new or additional programs or tariffs relating to PEVs will be offered to customers within the current planning period.

    a. Of these programs or tariffs, are any designed for or do they include educating customers on electricity as a transportation fuel?

    b. Does the Company have any programs where customers can express their interest or expectations for electric vehicle infrastructure as provided for by the Utility, and if so, please describe in detail.

RESPONSE:

The Company offers an EV charging installation rebates program for commercial & industrial customers that install EV charging solutions, a program that assists residential customers to avoid system on-peak charging and rewards that behavior with small monthly credits as well as a publicly available DC fast chargers. The Company consistently evaluates potential new programs that might be offered to assist customers with EV adoption.

a. While all programs include budget for education & outreach that inherently increases customer knowledge of electricity as a transportation fuel, the off-peak credit program, in particular, provides prospective and actual participants with education and experience not only in using electricity as a fuel but also in managing that use for the benefit of the system as a whole. The Company also regularly updates its website to enhance web pages for consumer information of electric vehicles and electric vehicle infrastructure.
b. The Company consistently seeks to add programs and processes that ease the transition to electric transport for customers. These efforts include consideration of programs that would assist with or directly provide for privately controlled charging infrastructure. In its recently submitted rate case, the Company has proposed to expand the successful Off Peak Credit program as well as implement a Make Ready Credit program. The Make Ready Credit program provides funding for behind the meter infrastructure to support customer

or third party owned EV chargers for both residential and non-residential customers and has proven successful in other parts of the Duke Energy footprint.

22. Has the Company conducted or contracted any research to determine demographic and regional factors that influence the adoption of PEVs applicable to its service territory? If so, please describe in detail the methodology and findings.

<u>RESPONSE:</u>

The Company has not studied demographic characteristics. The Company uses registration data as a base dataset for EV adoption so some regional characteristics/factors would be reflected in this dataset, but at this time the company has not conducted any research into demographics factors that influence adoption based on historical adoption and future trends.

23. Please describe if and how Section 339.287, Florida Statutes, (Electric Vehicle Charging Stations; Infrastructure Plan Development) has impacted the Company's projection of PEV growth and related demand and energy growth.

<u>RESPONSE:</u>

The Florida Statute Section 287 resulted in the FDOT EV Infrastructure Master Plan which delivers a comprehensive course of action to efficiently and effectively provide for PEV charging infrastructure to support the goals of F.S. 339.287. There are no direct model inputs related to the Florida Statue, but this statue continues to support the EV modeling assumptions that there will be strong EV infrastructure growth in upcoming years.

24. What has the Company learned about the impact of PEV ownership on the Company's actual and forecasted peak demand?

<u>RESPONSE:</u>

Currently, there are approximately 50k EVs in Duke Energy Florida's jurisdiction and while this is a large number, Duke Energy does not know where all of these EVs are located and it is still a small fraction of the total overall vehicle market (less than 1.5%). As continued adoption occurs, additional pilot/program data on EV charging becomes available, and charging load shapes specific to Duke Energy Florida are better understood compared to national sources (such as NREL's EVI-Pro), the Company will use what it learns to continue to benchmark the national data to further refine the Duke Energy Florida EV impacts on peak demand.

25. If applicable, please list and briefly describe all PEV pilot programs the Company is currently implementing and the status of each program.

RESPONSE:

The Company's 6th Annual Report to the Florida Public Service Commission on its EV programs provides descriptions of and updates on its programs.

26. If applicable, please describe any key findings and metrics of the Company's PEV pilot program(s) which reveal the PEV impact to the demand and energy requirements of the Company.

RESPONSE:

The Company's 6th Annual Report to the Florida Public Service Commission on its EV programs provides findings and metrics of its programs.

Demand Response

27. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Participation). Complete the table by providing for each source of demand response annual customer participation information for 10 years prior to the current planning period. Please also provide a summary of all sources of demand response using the table.

RESPONSE:

Please see table below and tab *DR Participation* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

[Demand Response Source or All Demand Response Sources]									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	409,689	724	1,014	3,156	23	27	1,977	DNA	DNA
2015	410,855	752	1,055	6,372	29	35	1,375	DNA	DNA
2016	415,838	714	1,014	8,782	79	88	1,569	DNA	DNA
2017	424,246	756	1,065	9,592	34	43	2,559	DNA	DNA
2018	429,750	783	1,090	6,478	42	51	2,545	DNA	DNA
2019	432,277	786	1,098	6,862	69	76	2,058	DNA	DNA
2020	435,224	875	1,136	2,758	97	85	1,983	DNA	DNA
2021	435,102	908	1,161	1,613	9	10	2,709	DNA	DNA
2022	433,981	924	1,172	772	5	5	1,215	DNA	DNA
2023	431,462	911	1,157	2,922	29	31	828	2	2
Notes									
(Include Notes Here)									

Residential Load Management									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	409,227	355	654	3,145	3	7	1,976	2	4
2015	410,396	357	656	6,345	7	13	1,372	2	3
2016	415,369	366	669	8,634	10	19	1,300	1	6
2017	423,900	382	694	9,561	11	20	2,553	3	4
2018	429,403	388	698	6,424	7	13	2,542	3	4
2019	431,862	396	711	6,847	7	14	2,046	2	4
2020	434,807	394	671	2,735	3	6	1,980	2	4
2021	434,663	392	667	1,604	2	3	2,704	4	5
2022	433,563	390	665	767	1	1	1,181	2	2
2023	431,041	377	650	2,916	3	5	825	1	1
Notes									
A transition from CSS to SAP began Nov 1 2021. The residential transition is ongoing and many of the reports have not been completed									
Beginning year 2023 customers = SAP/HANA report for participants Jan 1, 2023 - Jan 31, 2023									
Capacity at generator based on participant counts									

Commercial Load Management									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	65	4	0	0	0	0	0	2	0
2015	64	4	0	0	0	0	1	0	0
2016	63	4	0	0	0	0	0	0	0
2017	63	4	0	0	0	0	0	0	0
2018	63	4	0	0	0	0	0	0	0
2019	63	4	0	0	0	0	0	0	0
2020	63	4	0	0	0	0	0	0	0
2021	63	4	0	0	0	0	4	0	0
2022	59	4	0	0	0	0	1	0	0
2023	59	4	0	0	0	0	0	0	0
Notes									
The program closed to new participants in 2000 and several participants have closed their accounts.									

Standby Generation									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	259	103	104	10	5	5	1	DNA	DNA
2015	260	108	109	25	20	20	2	DNA	DNA
2016	269	68	68	147	68	68	269	DNA	DNA
2017	145	77	77	28	7	7	5	DNA	DNA
2018	147	82	82	12	3	3	1	DNA	DNA
2019	178	83	83	1	0	0	3	DNA	DNA
2020	175	80	80	5	2	0	1	DNA	DNA
2021	179	81	80	5	2	2	3	1	1
2022	183	83	82	3	1	1	0	0	0
2023	186	83	82	4	3	3	3	1	1
Notes									
See note below									

Interruptible Service									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	134	256	249	1	15	15	0	DNA	DNA
2015	131	277	283	2	3	3	1	DNA	DNA
2016	133	270	270	1	1	1	0	DNA	DNA
2017	134	287	287	3	16	16	1	DNA	DNA
2018	133	303	303	42	32	34	2	DNA	DNA
2019	170	297	297	14	62	62	5	DNA	DNA
2020	175	389	376	18	92	79	1	DNA	DNA
2021	193	395	381	4	6	6	2	2	2
2022	172	398	384	2	3	3	34	4.8	4.8
2023	172	398	384	1	22	22	0	0	0
Notes									
34 accounts no longer qualified for Interruptible Service beginning Jan 1 2022 and were removed from the program.									

Curtailable Service									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	4	6	7	0	0	0	0	DNA	DNA
2015	4	6	7	0	0	0	0	DNA	DNA
2016	4	6	7	0	0	0	0	DNA	DNA
2017	4	6	7	0	0	0	0	DNA	DNA
2018	4	6	7	0	0	0	0	DNA	DNA
2019	4	6	7	0	0	0	0	DNA	DNA
2020	4	8	9	0	0	0	0	DNA	DNA
2021	4	36	33	0	0	0	0	DNA	DNA
2022	4	49	41	0	0	0	0	DNA	DNA
2023	4	49	41	1	1	1	0	0	0
Notes									
As shown it was discovered in 2020 that one large account was not included in the CSS reports. The increase in reported MW is due to that.									

Table Footnotes:

(1) Total available capacity may change as a result of multiple factors including changes in participation,
changes in contribution from existing participants, and periodic evaluation of system response.
Thus, changes in total available capacity do not directly correlate to changes in participation.

(2) Added capacity corresponds to the addition of new participants and those converted from suspended accounts.

(3) Data is Not Available (DNA) on lost capacity for certain source programs and therefore is listed as
DNA in their specific table and for the aggregated ALL Source Table.

(4) Nov 1 2021, the customer accounting system CSS was moved to Customer Connect (SAP)

(5) The transtion has resulted in reporting errors affecting all programs, especially residential DR reporting

(6) The Interruptible Tariff was revised January 1 2022 resulting in 34 participants no longer qualifying for the program

(7) In 2021 it was discovered that a large Curtailable customer load was not being reported and corrected acoounting for additional reported load.

(8) The Commerical Load Management program was closed to new participants in 2000 and participation is slowly diminishing

(9) During 2016 the Emergency Stand-by Tariff was closed and the customers were removed from the program.
The Standby Generation Tariff was modified and the program renewed as non-Emergency Standby Tariff.

28. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Annual Use). Complete the table by providing for each source of demand response annual usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

<u>RESPONSE:</u>

Please see table below and tab *DR Annual Use* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

[Demand Response Source or All Demand Response Sources]										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		MW	Number of Customers	MW	Number of Customers		MW	Number of Customers	MW	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	1	48	174	79	180
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions										

Residential Load Management										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions.										

Commercial Load Management										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	*	*	*	*	*	*	*	*	*	*
2015	*	*	*	*	*	*	*	*	*	*
2016	*	*	*	*	*	*	*	*	*	*
2017	*	*	*	*	*	*	*	*	*	*
2018	*	*	*	*	*	*	*	*	*	*
2019	*	*	*	*	*	*	*	*	*	*
2020	*	*	*	*	*	*	*	*	*	*
2021	*	*	*	*	*	*	*	*	*	*
2022	*	*	*	*	*	*	*	*	*	*
2023	*	*	*	*	*	*	*	*	*	*
Notes										
Commercial Demand Response is included in Residential Table Above										

Standby Generation										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	1	48	174	79	180
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions										

Interruptible Service										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
(Include Notes Here)										

Curtailable Service										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
(Include Notes Here)										

29. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Peak Activation). Complete the table by providing for each source of demand response annual seasonal peak activation information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

RESPONSE:

Please see table below and tab *DR Peak Activation* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

[Demand Response Source or All Demand Response Sources]							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak?	Number of Customers Activated	Capacity Activated	Activated During Peak?	Number of Customers Activated	Capacity Activated
		(Y/N)		(MW)	(Y/N)		(MW)
2014	409,689	N	0	0	N	0	0
2015	410,855	N	0	0	N	0	0
2016	415,839	N	0	0	N	0	0
2017	424,246	N	0	0	N	0	0
2018	429,750	N	0	0	N	0	0
2019	432,277	N	0	0	N	0	0
2020	435,224	N	0	0	N	0	0
2021	435,102	N	0	0	N	0	0
2022	433,981	N	0	0	N	0	0
2023	432,208	N	0	0	N	0	0
Notes							
No events occurred							

Residential Load Management							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	409,227	N	0	0	N	0	0
2015	410,396	N	0	0	N	0	0
2016	415,369	N	0	0	N	0	0
2017	423,900	N	0	0	N	0	0
2018	429,403	N	0	0	N	0	0
2019	431,862	N	0	0	N	0	0
2020	434,807	N	0	0	N	0	0
2021	434,663	N	0	0	N	0	0
2022	433,563	N	0	0	N	0	0
2023	431,784	N	0	0	N	0	0
Notes							
From SAP/HANA report for average participants 2023							

Commercial Load Management							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	65	*	*	*	*	*	*
2015	64	*	*	*	*	*	*
2016	64	*	*	*	*	*	*
2017	63	*	*	*	*	*	*
2018	63	*	*	*	*	*	*
2019	63	*	*	*	*	*	*
2020	63	*	*	*	*	*	*
2021	63	*	*	*	*	*	*
2022	59	*	*	*	*	4	*
2023	59	*	*	*	*	*	*
Notes							
* Commercial Demand Response is included in Residential Table above							

Standby Generation							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	259	N	0	0	N	0	0
2015	260	N	0	0	N	0	0
2016	269	N	0	0	N	0	0
2017	145	N	0	0	N	0	0
2018	147	N	0	0	N	0	0
2019	178	N	0	0	N	0	0
2020	175	N	0	0	N	0	0
2021	179	N	0	0	N	0	0
2022	183	N	0	0	N	0	0
2023	187	N	0	0	N	0	0
Notes							
(Include Notes Here)							

Interruptible Service							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	134	N	0	0	N	0	0
2015	131	N	0	0	N	0	0
2016	133	N	0	0	N	0	0
2017	134	N	0	0	N	0	0
2018	133	N	0	0	N	0	0
2019	170	N	0	0	N	0	0
2020	175	N	0	0	N	0	0
2021	193	N	0	0	N	0	0
2022	172	N	0	0	N	0	0
2023	173	N	0	0	N	0	0
Notes							
(Include Notes Here)							

Curtailable Service							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak?	Number of Customers Activated	Capacity Activated	Activated During Peak?	Number of Customers Activated	Capacity Activated
		(Y/N)		(MW)	(Y/N)		(MW)
2014	4	N	0	0	N	0	0
2015	4	N	0	0	N	0	0
2016	4	N	0	0	N	0	0
2017	4	N	0	0	N	0	0
2018	4	N	0	0	N	0	0
2019	4	N	0	0	N	0	0
2020	4	N	0	0	N	0	0
2021	4	N	0	0	N	0	0
2022	4	N	0	0	N	0	0
2023	5	N	0	0	N	0	0
Notes							
(Include Notes Here)							

30. Please refer to the Excel Tables File (LOLP). Complete the table by providing the loss of load probability, reserve margin, and expected unserved energy for each year of the planning period.

RESPONSE:

Loss of Load Probability, Reserve Margin, and Expected Unserved Energy Base Case Load Forecast						
Year	Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2024	Duke Energy Florida is required to maintain a 20% Reserve Margin, therefore no LOLP study was conducted					
2025						
2026						
2027						
2028						
2029						
2030						
2031						
2032						
2033						

Generation & Transmission

Utility-Owned Generation

31. Please refer to the Excel Tables File (Unit Performance). Complete the table by providing information on each utility-owned generating resources' outage factors, availability factors, and average net operating heat rate (if applicable). For historical averages, use the past three years and for projected factors, use an average of the next ten-year period.

    RESPONSE:

    Please see table below and tab *Unit Performance* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Existing Generating Unit Operating Performance										
		Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
Plant Name	Unit No.	Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
ANCLOTE	1	12.12	12.12	2.08	2.08	74.36	74.36	11,430	11,430
	2	8.91	8.91	5.89	5.89	72.73	72.73	12,011	12,011
BARTOW	P1	5.87	5.87	26.95	26.95	53.13	53.13	15,040	15,040
	P2	7.15	7.15	4.02	4.02	68.94	68.94	15,771	15,771
	P3	6.13	6.13	31.23	31.23	52.26	52.26	16,665	16,665
	P4	6.62	6.62	7.04	7.04	67.06	67.06	14,932	14,932
BARTOW CC	4A	9.27	9.27	9.91	9.91	71.43	71.43	11,603	11,603
	4B	5.93	5.93	4.05	4.05	75.78	75.78	11,501	11,501
	4C	2.87	2.87	20.25	20.25	71.76	71.76	11,631	11,631
	4D	10.26	10.26	1.46	1.46	81.01	81.01	11,526	11,526
	4S	10.32	10.32	1.49	1.49	78.45	78.45	701	701
BAYBORO	P1	2.72	2.72	6.24	6.24	77.10	77.10	13,581	13,581
	P2	4.63	4.63	9.61	9.61	63.37	63.37	12,095	12,095
	P3	2.70	2.70	7.48	7.48	75.10	75.10	11,958	11,958
	P4	1.24	1.24	11.42	11.42	67.08	67.08	11,808	11,808
CITRUS CC	1A	9.51	9.51	3.53	3.53	77.34	77.34	10,524	10,524
	1B	9.50	9.50	0.95	0.95	78.41	78.41	10,558	10,558
	1S	8.81	8.81	1.09	1.09	84.84	84.84	770	770
	2A	10.31	10.31	0.77	0.77	78.20	78.20	10,452	10,452
	2B	10.13	10.13	1.88	1.88	77.80	77.80	10,511	10,511
	2S	7.99	7.99	0.64	0.64	86.05	86.05	691	691
CRYSTAL RIVER	4	5.59	5.59	10.63	10.63	74.09	74.09	11,068	11,068
	5	5.55	5.55	1.62	1.62	80.07	80.07	10,757	10,757
DEBARY	P2	3.92	3.92	1.85	1.85	71.44	71.44	15,150	15,150
	P3	0.15	0.15	5.79	5.79	66.05	66.05	14,906	14,906
	P4	3.44	3.44	4.73	4.73	69.33	69.33	16,118	16,118
	P5	0.03	0.03	10.16	10.16	61.92	61.92	14,934	14,934
	P6	3.63	3.63	14.60	14.60	61.38	61.38	14,638	14,638
	P7	3.37	3.37	2.81	2.81	77.68	77.68	14,051	14,051
	P8	3.70	3.70	20.06	20.06	61.08	61.08	13,277	13,277
	P9	0.08	0.08	8.53	8.53	45.52	45.52	14,041	14,041
	P10	6.62	6.62	3.77	3.77	46.47	46.47	14,030	14,030
HINES	1A	14.17	14.17	3.28	3.28	77.51	77.51	11,427	11,427
	1B	13.54	13.54	4.16	4.16	78.70	78.70	11,570	11,570
	1S	13.48	13.48	1.56	1.56	80.55	80.55	-	-
	2A	12.77	12.77	1.70	1.70	83.85	83.85	11,874	11,874
	2B	12.73	12.73	1.27	1.27	82.46	82.46	11,908	11,908
	2S	12.57	12.57	1.04	1.04	78.11	78.11	-	-
	3A	17.91	17.91	3.08	3.08	71.35	71.35	11,513	11,513
	3B	17.50	17.50	2.18	2.18	74.04	74.04	11,336	11,336
	3S	17.48	17.48	1.61	1.61	75.79	75.79	-	-
	4A	4.39	4.39	1.75	1.75	89.97	89.97	11,220	11,220
	4B	4.35	4.35	11.83	11.83	80.34	80.34	11,294	11,294
	4S	4.08	4.08	1.13	1.13	84.91	84.91	-	-
INTERCESSION CITY	P1	7.98	7.98	0.00	0.00	72.48	72.48	14,365	14,365
	P2	11.14	11.14	0.23	0.23	67.29	67.29	14,538	14,538
	P3	5.70	5.70	1.05	1.05	66.66	66.66	15,475	15,475
	P4	5.17	5.17	1.00	1.00	54.97	54.97	14,887	14,887
	P5	7.29	7.29	2.18	2.18	74.54	74.54	14,316	14,316
	P6	7.51	7.51	2.73	2.73	72.10	72.10	14,296	14,296
	P7	2.38	2.38	0.80	0.80	72.35	72.35	13,571	13,571
	P8	8.71	8.71	2.13	2.13	59.78	59.78	14,127	14,127
	P9	15.59	15.59	0.79	0.79	52.69	52.69	13,642	13,642
	P10	11.10	11.10	0.46	0.46	49.86	49.86	14,061	14,061
	P11	1.95	1.95	11.07	11.07	72.77	72.77	12,596	12,596
	P12	11.80	11.80	0.80	0.80	73.52	73.52	13,348	13,348
	P13	5.82	5.82	0.62	0.62	77.58	77.58	13,591	13,591
	P14	10.43	10.43	0.44	0.44	74.48	74.48	13,823	13,823
OSPREY	1A	16.62	16.62	2.37	2.37	72.52	72.52	11,915	11,915
	1B	17.99	17.99	3.17	3.17	70.26	70.26	11,935	11,935
	1S	16.65	16.65	0.56	0.56	67.12	67.12	772	772
SUWANNEE	P1	3.24	3.24	4.20	4.20	53.42	53.42	14,485	14,485
	P2	7.28	7.28	0.09	0.09	55.65	55.65	14,094	14,094
	P3	5.02	5.02	1.06	1.06	67.21	67.21	14,058	14,058
TIGER BAY	1A	2.84	2.84	4.91	4.91	79.94	79.94	11,964	11,964
	1S	2.86	2.86	5.05	5.05	84.22	84.22	-	-
UNIV. OF FLA.	P1	9.80	9.80	0.93	0.93	81.89	81.89	8,302	8,302

NOTE: Historical - average of past three years (2021,2022, 2023)

Projected - average of past three years (2021,2022, 2023)

32. Please refer to the Excel Tables File (Utility Existing Traditional). Complete the table by providing information on each utility-owned traditional generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

RESPONSE:

Please see table below and tab *Unit Performance* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
ANCLOTE	1	PASCO	ST	NG	October	1974	522	534	508	521	508	521	17.7
ANCLOTE	2	PASCO	ST	NG	October	1978	520	527	505	514	505	514	20.6
CRYSTAL RIVER	4	CITRUS	ST	BIT	December	1982	769	778	712	721	712	721	30.4
CRYSTAL RIVER	5	CITRUS	ST	BIT	October	1984	755	778	698	721	698	721	30.3
P L BARTOW	4	PINELLAS	CC	NG	June	2009	1132	1279	1,112	1,259	1,112	1,259	59.4
CITRUS COUNTY COMBINED CYCLE	PB1	CITRUS	CC	NG	October	2018	825	943	807	925	807	925	74.4
CITRUS COUNTY COMBINED CYCLE	PB2	CITRUS	CC	NG	November	2018	821	947	803	929	803	929	76.5
HINES ENERGY COMPLEX	1	POLK	CC	NG	April	1999	508	528	501	521	501	521	50.5
HINES ENERGY COMPLEX	2	POLK	CC	NG	December	2003	540	557	532	549	532	549	52.2
HINES ENERGY COMPLEX	3	POLK	CC	NG	November	2005	531	543	523	535	523	535	55.1
HINES ENERGY COMPLEX	4	POLK	CC	NG	December	2007	533	552	525	544	525	544	72.6
OSPREY ENERGY CENTER POWER PLANT	1	POLK	CC	NG	May	2004	608	638	596	626	245	245	39.5
TIGER BAY	1	POLK	CC	NG	August	1997	202	233	199	230	199	230	55.9
BARTOW	P1	PINELLAS	GT	DFO	May	1972	41	50	41	50	41	50	0.1
BARTOW	P2	PINELLAS	GT	NG	June	1972	41	53	41	53	41	53	1.8
BARTOW	P3	PINELLAS	GT	DFO	June	1972	41	51	41	51	41	51	0.0
BARTOW	P4	PINELLAS	GT	NG	June	1972	45	58	45	58	45	58	1.9
BAYBORO	P1	PINELLAS	GT	DFO	April	1973	44	58	44	58	44	58	0.3
BAYBORO	P2	PINELLAS	GT	DFO	April	1973	21	27	21	27	21	27	0.3
BAYBORO	P3	PINELLAS	GT	DFO	April	1973	43	57	43	57	43	57	0.2
BAYBORO	P4	PINELLAS	GT	DFO	April	1973	43	56	43	56	43	56	0.1
DEBARY	P2	VOLUSIA	GT	DFO	December	1975	45	57	45	57	45	57	0.1
DEBARY	P3	VOLUSIA	GT	DFO	December	1975	45	59	45	59	45	59	0.2
DEBARY	P4	VOLUSIA	GT	DFO	December	1975	46	59	46	59	46	59	0.1
DEBARY	P5	VOLUSIA	GT	DFO	December	1975	45	58	45	58	45	58	0.1
DEBARY	P6	VOLUSIA	GT	DFO	December	1975	46	59	46	59	46	59	0.1
DEBARY	P7	VOLUSIA	GT	NG	October	1992	74	93	74	93	74	93	4.7
DEBARY	P8	VOLUSIA	GT	NG	October	1992	75	94	75	94	75	94	3.6
DEBARY	P9	VOLUSIA	GT	NG	October	1992	76	94	76	94	76	94	3.6
DEBARY	P10	VOLUSIA	GT	DFO	October	1992	72	88	72	88	72	88	0.2
INTERCESSION CITY	P1	OSCEOLA	GT	DFO	May	1974	45	61	45	61	45	61	0.3
INTERCESSION CITY	P2	OSCEOLA	GT	DFO	May	1974	46	60	46	60	46	60	0.2
INTERCESSION CITY	P3	OSCEOLA	GT	DFO	May	1974	46	61	46	61	46	61	0.1
INTERCESSION CITY	P4	OSCEOLA	GT	DFO	May	1974	46	62	46	62	46	62	0.2
INTERCESSION CITY	P5	OSCEOLA	GT	DFO	May	1974	45	59	45	59	45	59	0.3
INTERCESSION CITY	P6	OSCEOLA	GT	DFO	May	1974	47	60	47	60	47	60	0.1
INTERCESSION CITY	P7	OSCEOLA	GT	NG	October	1993	78	90	78	90	78	90	3.3
INTERCESSION CITY	P8	OSCEOLA	GT	NG	October	1993	77	88	77	88	77	88	3.1
INTERCESSION CITY	P9	OSCEOLA	GT	NG	October	1993	77	88	77	88	77	88	1.6
INTERCESSION CITY	P10	OSCEOLA	GT	NG	October	1993	74	86	74	86	74	86	3.6
INTERCESSION CITY	P11	OSCEOLA	GT	DFO	January	1997	140	161	140	161	140	161	0.4
INTERCESSION CITY	P12	OSCEOLA	GT	NG	December	2000	73	89	73	89	73	89	9.0
INTERCESSION CITY	P13	OSCEOLA	GT	NG	December	2000	73	91	73	91	73	91	8.0
INTERCESSION CITY	P14	OSCEOLA	GT	NG	December	2000	73	90	73	90	73	90	3.3
SUWANNEE RIVER	P1	SUWANNEE	GT	NG	October	1980	48	65	48	65	48	65	2.6
SUWANNEE RIVER	P2	SUWANNEE	GT	DFO	October	1980	48	64	48	64	48	64	0.5
SUWANNEE RIVER	P3	SUWANNEE	GT	NG	November	1980	49	65	49	65	49	65	4.0
UNIVERSITY OF FLORIDA	P1	ALACHUA	GT	NG	January	1994	44	50	44	50	44	50	86.1
Notes													
(Include Notes Here)													

33. Please refer to the Excel Tables File (Utility Planned Traditional). Complete the table by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

   a. For each planned utility-owned traditional generation resource in the table, provide a narrative response discussing the current status of the project.

RESPONSE:

Please see table below and tab *Existing Unit Traditional* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Undesignated CT	P1	Unknown	GT	NG	June	2032	215	235	215	235	215	235	1.93
Undesignated CT	P2	Unknown	GT	NG	June	2032	215	235	215	235	215	235	1.93
Undesignated CT	P3	Unknown	GT	NG	June	2033	215	235	215	235	215	235	1.93
Undesignated CT	P4	Unknown	GT	NG	June	2033	215	235	215	235	215	235	1.93
Notes													
(Include Notes Here)													

34. Please refer to the Excel Tables File (Utility Existing Renewable). Complete the table by providing information on each utility-owned renewable generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

RESPONSE:

Please see table below and tab *Utility Existing Renewable* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Econolockhatchee Photovoltaic Array	1	Volusia	PV	SO	1	1989	0.007	0.007	0.007	0.007	0	0	16
Osceola	1	Osceola	PV	SO	5	2016	3.8	3.8	3.8	3.8	1.7	0	11
Perry	1	Taylor	PV	SO	7	2016	5.1	5.1	5.1	5.1	2.3	0	16
Suwannee	1	Suwannee	PV	SO	12	2017	8.8	8.8	8.8	8.8	4.0	0	21
Hamilton	1	Hamilton	PV	SO	12	2018	74.9	74.9	74.9	74.9	42.7	0	25
Lake Placid	1	Highlands	PV	SO	12	2019	45.0	45.0	45.0	45.0	25.7	0	16
Trenton	1	Gilchrist	PV	SO	12	2019	74.9	74.9	74.9	74.9	42.7	0	21
St. Petersburg Pier	1	Pinellas	PV	SO	12	2019	0.35	0.35	0.35	0.35	0.2	0	18
Columbia	1	Columbia	PV	SO	3	2020	74.9	74.9	74.9	74.9	42.7	0	22
DeBary	1	Volusia	PV	SO	5	2020	74.5	74.5	74.5	74.5	33.5	0	19
Sante Fe	1	Columbia	PV	SO	3	2021	74.9	74.9	74.9	74.9	42.7	0	21
Twin Rivers	1	Hamilton	PV	SO	3	2021	74.9	74.9	74.9	74.9	42.7	0	22
Duette	1	Manatee	PV	SO	10	2021	74.5	74.5	74.5	74.5	42.5	0	22
Sandy Creek	1	Bay	PV	SO	5	2022	74.9	74.9	74.9	74.9	42.5	0	24
Ft Green	1	Hardee	PV	SO	6	2022	74.9	74.9	74.9	74.9	33.5	0	19
Charlie Creek	1	Hardee	PV	SO	8	2022	74.9	74.9	74.9	74.9	42.7	0	25
Bay Trail	1	Citrus	PV	SO	9	2022	74.9	74.9	74.9	74.9	42.7	0	21
Dolphin Solar	1	Pinellas	PV	SO	8	2022	0.25	0.25	0.25	0.25	0	0	26
Hildreth	1	Suwannee	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	26
High Springs	1	Alachua	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	21
Hardeetown	1	Levy	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	25
Bay Ranch	1	Bay	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	27
John Hopkins	1	Pinellas	PV	SO	11	2023	0.75	0.75	0.75	0.75	0.75	0	11
Hines Floating Solar	1	Polk	PV	SO	11	2023	0.75	0.75	0.75	0.75	0.75	0	9
Notes													
**Solar CFs are from: Schedule A-4s or DEF's year-end Solar Plant Operation Status Report filed as requested under docket #20240007.													

35. Please refer to the Excel Tables File (Utility Planned Renewable). Complete the table by providing information on each utility-owned renewable generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

    a. For each planned utility-owned renewable resource in the table, provide a narrative response discussing the current status of the project.

RESPONSE:

Please see table below and tab *Utility Planned Renewable* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Mule Creek	1	Bay	PV	SO	3	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Winquepin	1	Madison	PV	SO	3	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Falmouth	1	Suwannee	PV	SO	8	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
County Line	1	Gilchrist	PV	SO	10	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Sundance	1	Madison	PV	SO	3	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Bailey Mill	1	Jefferson	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Half Moon	1	Sumter	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Rattler	1	Hernando	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #33	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #34	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #35	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #36	1	Unknown	PV	SO	12	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #37	1	Unknown	PV	SO	12	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #38	1	Unknown	BA	N/A	3	2027	100	100	100	100	90	90	~10%
Renewable Energy Center #39	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #40	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #41	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #42	1	Unknown	PV	SO	12	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #43	1	Unknown	PV	SO	12	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #44	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #45	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #46	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #47	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #48	1	Unknown	SPS	SO	7	2028	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #49	1	Unknown	SPS	SO	7	2028	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #50	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #51	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #52	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #53	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #54	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #55	1	Unknown	SPS	SO	7	2029	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #56	1	Unknown	SPS	SO	7	2029	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #57	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #58	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #59	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #60	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #61	1	Unknown	SPS	SO	7	2030	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #62	1	Unknown	SPS	SO	7	2030	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #63	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #64	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #65	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #66	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #67	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #68	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #69	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #70	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #71	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #72	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #73	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #74	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #75	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #76	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #77	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #78	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #79	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #80	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #81	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #82	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #83	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #84	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #85	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #86	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #87	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #88	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%

Notes

Mule Creek and Winquepin were placed into service in March 2023. Falmouth and County Line are under constrcution and are expected to be in service Q3-2024 and Q4- 2024, respectively. The rest of the units are still in the development or planning stages. *DEF modeling derives an equivalent summer non-coincident, but on-peak-hour capacity value equal to 25% of the facility's nameplate rating for planned PV installations from 2025 to 2027 and 10% for 2028 and beyond.

36. Please list and discuss any planned utility-owned renewable resources that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the changes? What, if any, were the secondary reasons?

RESPONSE:

DEF did not have any planned utility-owned renewable resources that were placed in service in 2023 that were cancelled, delayed, or reduced in scope.

37. [Investor-Owned Utilities Only] Please refer to the Excel Tables File (As-Available Energy Rate). Complete the table by providing, on a system-wide basis, the historical annual average as-available energy rate in the Company's service territory for the 10-year period prior to the current planning period. Also, provide the projected annual average as-available energy rate in the Company's service territory for the current planning period. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.

RESPONSE:

Please see table below and tab *As-Available Energy Rate* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Year		As-Available Energy ($/MWh)	On-Peak Average ($/MWh)	Off-Peak Average ($/MWh)
Actual	2014	37.68	42.97	33.21
	2015	26.03	28.74	23.74
	2016	25.97	29.79	22.73
	2017	28.97	32.44	26.03
	2018	30.84	34.80	27.49
	2019	23.71	27.22	20.73
	2020	18.57	21.22	16.33
	2021	34.45	40.53	29.30
	2022	61.67	73.74	51.45
	2023	24.47	28.56	21.00
Projected	2024	30.33	33.98	27.24
	2025	33.83	37.32	30.88
	2026	33.09	36.25	30.41
	2027	31.68	34.39	29.38
	2028	30.10	32.05	28.45
	2029	29.85	31.94	28.09
	2030	29.09	30.50	27.90
	2031	29.23	30.66	28.02
	2032	28.59	30.25	27.18
	2033	29.37	31.53	27.54
Notes				
This year, both the Actuals and the Projected As-Available payment rates shown reflect all components but for the delivery voltage adjustment (because the generator's interconnection level is unknown) defined under rule 25-17.0825(2)(a). These components include: identifiable variable operating and maintenance expenses, start up costs, and a reasonable as-available block size of solar QF generation for appropriate customer protections. The Projected values are only valid and effective as of December 31, 2023 due to the volume of potential solar QF activity and fuel price volatility. DEF also anticipates that at some point, the system will have increasing amounts of time when the required DEF system resources along with potential solar QF generation may exceed DEF load levels and that excess generation is not fully captured in the Projected values herein.				

38. Please refer to the Excel Tables File (Planned PPSA Units). Complete the table by providing information on all planned traditional units with an in-service date within the current planning period. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.

RESPONSE:

Please see table below and tab *Planned PPSA Units* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Generating Unit Name	Summer Capacity (MW)	Certification Dates (if Applicable)		In-Service Date (MM/YY)
		Need Approved (Commission)	PPSA Certified	
Nuclear Unit Additions				
Combustion Turbine Unit Additions				
Undesignated CT	215	Not Required	Not Required	6/1/2032
Undesignated CT	215	Not Required	Not Required	6/1/2032
Undesignated CT	215	Not Required	Not Required	6/1/2033
Undesignated CT	215	Not Required	Not Required	6/1/2033
Combined Cycle Unit Additions				
Steam Turbine Unit Additions				
Notes				
(Include Notes Here)				

39. For each of the planned generating units, both traditional and renewable, contained in the Company's current planning period TYSP, please discuss the "drop dead" date for a decision on whether or not to construct each unit. Provide a timeline for the construction of each unit, including regulatory approval, and final decision point.

RESPONSE:

6/2032 Simple Cycle Units	2029				2030				2031				2032			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Evaluations																
Regulatory/Licensing/Permiting																
Engineer/Procure/Construct																

6/2033 Simple Cycle Units	2030				2031				2032				2033			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Evaluations																
Regulatory/Licensing/Permiting																
Engineer/Procure/Construct																

40. Please refer to the Excel Tables File (Capacity Factors). Complete the table by providing the actual and projected capacity factors for each existing and planned unit on the Company's system for the 11-year period beginning one year prior to the current planning period.

RESPONSE:

Please see table below and tab *Capacity Factors* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

RESPONSE:

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Anclote	1~2	Steam	Gas	19.2	14.9	13.4	10.6	8.3	10.5	12.7	10.2	11.1	11.5	11.2
Crystal River	4~5	Steam	Coal	30.3	17.2	15.4	13.1	12.3	10.9	11.2	12.6	12.9	12.1	15.0
Bartow CC	4	Combined Cycle	Gas	59.4	57.0	66.5	62.2	59.2	60.2	60.8	60.2	59.0	57.3	54.3
Citrus CC	1~2	Combined Cycle	Gas	75.5	83.6	81.8	79.3	84.7	80.1	79.3	77.9	69.9	73.4	71.5
Hines Energy Complex	1~4	Combined Cycle	Gas	57.6	68.1	65.3	64.7	61.0	60.8	57.2	56.9	54.8	51.2	50.1
Osprey CC	1	Combined Cycle	Gas	39.5	42.0	39.0	45.2	38.8	39.8	41.0	40.7	39.2	37.6	38.3
Tiger Bay	1	Combined Cycle	Gas	55.9	53.9	43.6	42.8	40.0	40.6	36.7	30.5	33.4	27.5	28.2
Bartow Peaker	1~4	Gas Turbine	Gas/Oil	1.0	0.2	0.3	0.4	0.9	1.0	1.1	0.9	1.5	1.2	1.6
Bayboro	1~4	Gas Turbine	Oil	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DeBary	2~10	Gas Turbine	Gas/Oil	1.7	0.7	0.6	0.6	1.4	1.7	1.6	1.5	2.3	2.2	2.6
Intercession City	1~14	Gas Turbine	Gas/Oil	2.6	0.8	0.8	0.8	1.3	1.2	1.4	0.9	1.4	1.4	1.9
New CT	1~4	Gas Turbine	Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.7
Suwannee Peaker	1~3	Gas Turbine	Gas/Oil	2.4	1.7	1.8	1.6	1.8	2.0	2.3	2.0	2.5	2.3	2.9
University of Florida	1	Gas Turbine	Gas	86.1	84.4	84.3	82.9	82.7	84.1	84.3	75.5	83.9	83.9	81.9
Solar Bailey Mill	1	PV	SO	0.0	0.0	18.6	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Bay Ranch	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.3
Solar Bay Trail	1	PV	SO	20.8	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.2	21.6
Solar Charlie Creek	1	PV	SO	30.7	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	26.5	20.3
Solar Columbia	1	PV	SO	21.8	27.2	27.2	27.2	27.2	27.2	27.2	26.6	24.1	21.3	18.6
Solar County Line	1	PV	SO	0.0	23.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	27.9	27.6
Solar Debary	1	PV	SO	18.6	23.5	23.5	23.5	23.5	23.5	23.5	23.0	20.6	18.3	16.0
Solar Duette	1	PV	SO	21.9	27.2	27.2	27.2	27.2	27.2	27.2	27.2	25.5	22.9	20.5
Solar Falmouth	1	PV	SO	0.0	25.9	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	28.5
Solar Fort Green	1	PV	SO	18.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	27.7	21.9
Solar Half Moon	1	PV	SO	0.0	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Hamilton	1	PV	SO	24.6	27.2	27.2	27.2	27.2	27.2	27.2	26.9	24.6	21.7	19.3
Solar Hardeetown	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	26.4
Solar High Spring	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.5
Solar Hildreth	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.5
Solar Lake Placid	1	PV	SO	16.0	27.1	27.1	27.1	27.0	27.0	27.0	26.8	24.8	22.5	20.5
Solar Mule Creek	1	PV	SO	0.0	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	28.5
Solar Osc Perry Suw	1	PV	SO	18.0	23.5	23.5	23.5	23.5	23.5	23.5	23.4	22.1	19.6	18.2
Solar Rattler	1	PV	SO	0.0	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Sandy Creek	1	PV	SO	24.0	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	26.3	20.2
Solar Santa Fe	1	PV	SO	20.9	27.2	27.2	27.2	27.2	27.2	27.2	27.1	25.1	22.4	19.8
Solar St Pete Pier	1	PV	SO		23.5	23.5	23.5	23.5	23.5	23.5	23.2	21.1	18.9	17.1
Solar Sundance	1	PV	SO	0.0	0.0	28.9	27.8	27.8	27.8	27.8	27.8	27.6	27.8	27.8
Solar Trenton	1	PV	SO	21.5	27.2	27.2	27.2	27.2	27.2	27.2	27.0	24.8	22.2	19.5
Solar Twin Rivers	1	PV	SO	22.4	27.2	27.2	27.2	27.2	27.2	27.2	27.1	25.3	22.6	20.1
Solar Winquepin	1	PV	SO	0.0	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	28.5
Solar Generic	1~49	PV	SO	0.0	0.0	0.0	26.1	27.3	27.5	27.5	27.6	27.6	27.4	27.2
Solar plus Storage Generic	1~6	PV-Storage	SO	0.0	0.0	0.0	0.0	0.0	33.5	35.3	35.7	36.2	35.7	35.5
Battery 2 Hours	1~2	Storage	System	0.0	0.0	0.0	0.0	8.2	8.5	9.8	9.7	10.1	10.9	11.9
Notes														
The "Battery 2 Hours" capacity factor values represent the battery generation (not offset by charging) compared to rated capacity.														

41. [Investor-Owned Utilities Only] For each existing unit on the Company's system, please provide the planned retirement date. If the Company does not have a planned retirement date for a unit, please provide an estimated lifespan for units of that type and a non-binding estimate of the retirement date for the unit.

RESPONSE:

DEPRECIABLE GROUP	Major Year in Service	Probable Retirement Year	Life Span
STEAM PRODUCTION			
ANCLOTE	1974	2042	68
CRYSTAL RIVER UNITS 4 and 5	1982	2034	52
OTHER PRODUCTION			
COMBINED-CYCLE			
BARTOW	2009	2049	40
CITRUS	2018	2058	40
OSPREY ENERGY CENTER	2004	2044	40
HINES UNIT 1	1999	2039	40
HINES UNIT 2	2003	2043	40
HINES UNIT 3	2005	2045	40
HINES UNIT 4	2007	2047	40
TIGER BAY	1995	2035	40
SIMPLE CYCLE			
BARTOW UNITS 1 and 3	1972	2034	62
BARTOW UNITS 2 and 4	1972	2027	55
SUWANNEE RIVER	1980	2034	54
BAYBORO	1973	2024	51
DEBARY UNITS 2-6	1975	2027	52
DEBARY UNITS 7-10	1992	2037	45
INTERCESSION CITY UNITS 1-6	1974	2034	60
INTERCESSION CITY UNITS 7-10	1993	2038	45
INTERCESSION CITY UNITS 11	1997	2042	45
INTERCESSION CITY UNITS 12-14	2000	2045	45
UNIV. OF FLA.	1993	2032	39
SOLAR			
OSCEOLA	2016	2046	30
PERRY	2016	2046	30
SUWANNEE	2017	2047	30
HAMILTON	2018	2048	30
LAKE PLACID	2019	2049	30
TRENTON	2019	2049	30
COLUMBIA	2020	2050	30
DEBARY	2020	2050	30
SANTA FE	2021	2051	30
TWIN RIVERS	2021	2051	30
DUETTE	2021	2051	30
SANDY CREEK	2022	2052	30
FORT GREEN	2022	2052	30
CHARLIE CREEK	2022	2052	30
BAY TRAIL	2022	2052	30
HILDRETH	2023	2053	30
HIGH SPRINGS	2023	2053	30
HARDEETOWN	2023	2053	30
BAY RANCH	2023	2053	30

42. Please refer to the Excel Tables File (Steam Unit CC Conversion). Complete the table by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.

RESPONSE:

Please see table below and tab *Steam Unit CC Conversion* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Anclote	NG	508	10/74	CC	Project Development
Anclote	NG	505	10/78	CC	Project Development
Crystal River	BIT	712	12/82	CC/IGCC	Project Development
Crystal River	BIT	698	10/84	CC/IGCC	Project Development
Notes					
(Include Notes Here)					

43. Please refer to the Excel Tables File (Steam Unit Fuel Switching). Complete the table by providing information on all of the Company's steam units that are potential candidates for fuel-switching.

RESPONSE:

Please see table below and tab *Steam Unit Fuel Switching* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Crystal River	BIT	712	12/82	CC/IGCC	Project Development
Crystal River	BIT	698	10/84	CC/IGCC	Project Development
Notes					
Notes					
(Include Notes Here)					

44. Please refer to the Excel Tables File (Transmission Lines). Complete the table by providing a list of all proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. Please also include in the table transmission lines that have already been approved, but are not yet in-service.

RESPONSE:

Please see table below and tab *Transmission Lines* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
N/A	N/A	N/A	N/A	N/A	N/A
Notes					
DEF has no proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act, nor are there any that have already been approved, but are not yet in-service.					

Purchases and Sales

45. Please refer to the Excel Tables File (Firm Purchases). Complete the table by providing information on the Utility's firm capacity and energy purchases.

RESPONSE:

Please see table below and tab *Firm Purchases* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Nominal, Firm Purchases		
	Firm Purchases	
Year	$/MWh	Escalation %
HISTORY:		
2021	156.92	
2022	179.25	14%
2023	190.00	6%
FORECAST:		
2024	227.51	
2025	208.36	-8%
2026	212.46	2%
2027	137.46	-35%
2028	38.25	-72%
2029	38.22	0%
2030	33.76	-12%
2031	35.71	6%
2032	36.17	1%
2033	36.86	2%

46. Please refer to the Excel Tables File (PPA Existing Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

RESPONSE:

Please see table below and tab *PPA Existing Traditional* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Northern Star Generation	Mulberry	1	Polk	CC	NG	115	115	115	115	115	115	12/1/1994	8/8/2024
Northern Star Generation	Orange Cogen	1	Polk	CC	NG	104	104	104	104	104	104	12/16/1995	12/31/2025
General Electric Financial Services	Shady Hills	1-3	Pasco	GT	NG	482	524	482	524	482	524	4/1/2007	4/30/2024
Northern Star Generation	Vandolah Power	1-4	Hardee	GT	NG	655	699	655	699	655	699	6/1/2012	5/31/2027
Notes													
(Include Notes Here)													

47. Please refer to the Excel Tables File (PPA Planned Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

    a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

RESPONSE:

Please see table below and tab *PPA Planned Traditional* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
(Include Notes Here)													

48. Please refer to the Excel Tables File (PPA Existing Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

RESPONSE:

Please see table below and tab *PPA Existing Renewable* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Pasco County	Pasco County Resource Recovery	ST	Pasco	ST	MSW	23	23	23	23	23	23	1/1/1995	12/31/2024
Pinellas County	Pinellas County Resource Recovery	ST	Pinellas	ST	MSW	55	55	55	55	55	55	1/1/1995	12/31/2024
As Available													
Lake County	Lake County Resource Recovery	ST	Lake	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	7/1/2014	N/A
Dade County	Metro-Dade County Resource Recovery	ST	Dade	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2014	N/A
Lee County	Lee County Resource Recovery	ST	Lee	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2017	N/A
PCS Phosphate	Swift Creek	ST	Hamilton	ST	WH	N/A	N/A	N/A	N/A	N/A	N/A	1/1/1980	N/A
Notes													
(Include Notes Here)													

49. Please refer to the Excel Tables File (PPA Planned Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

   a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

RESPONSE:

Please see table below and tab *PPA Planned Renewable* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
As Available													
G2 Energy Marion	G2 Energy Marion	U1	Marion	ST	LNG	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2024	N/A
Notes													
(Include Notes Here)													

a. DEF executed a LGIA with G2 Energy Marion on November 15, 2023. DEF executed an As Available agreement with G2 Energy Marion on December 4, 2023 that was effective January 1, 2024. The As Available agreement was filed with the FPSC on December 11, 2023.

50. Please list and discuss any purchased power agreements with a renewable generator that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the change? What, if any, were the secondary reasons?

RESPONSE:

DEF did not have any purchased power agreements with a renewable generator that were cancelled, delayed, or reduced in scope within the past year.

51. Please refer to the Excel Tables File (PSA Existing). Complete the table by providing information on each power sale agreement still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered from the Company to a third-party during said year.

RESPONSE:

Please see table below and tab *PSA Existing* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)		Description	Status (Expired / Modified / Same)
						Sum	Win	Sum	Win	Sum	Win	Start	End		
Seminole	N/A	N/A	N/A	N/A	Nat Gas	N/A	N/A	N/A	N/A	200-500	200-500	6/1/2016	12/31/2024	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0.014	0.014	6/1/1987	Evergreen	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0	50-600	1/1/2021	3/31/2027	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	50-400	50-400	1/1/2021	12/31/2030	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	50-400	50-400	1/1/2021	12/31/2035	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	250	0	6/1/2023	9/30/2023	Partial Reqs	Modified
Reedy Creek	N/A	N/A	N/A	N/A	Nat Gas	N/A	N/A	N/A	N/A	141	81	1/1/2016	12/31/2024	Partial Reqs	Modified
Tampa Electric	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0-515	0-515	1/26/2019	11/30/2024	Partial Reqs	Modified
Notes															
The Seminole agreements have optionality. The agreements with 50-400 MW listed have a combined maximum of 450 MW through 2030.															
Tampa Electric was extended through November 2024															

52. Please refer to the Excel Tables File (PSA Planned). Complete the table by providing information on each power sale agreement pursuant to which energy will begin to be delivered from the Company to a third-party during the current planning period.

a. For each power sale agreement in the table, provide a narrative response discussing the current status of the agreement.

RESPONSE:

Please see table below and tab *PSA Planned* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
(Include Notes Here)													

53. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified. What was the primary reason for the change? What, if any, were the secondary reasons?

RESPONSE:

DEF did not have any long-term power sale agreements within the past year that were cancelled, expired, or modified.

Renewable Generation

54. Please refer to the Excel Tables File (Annual Renewable Generation). Complete the table by providing the actual and projected annual energy output of all renewable resources on the Company's system, by source, for the 11-year period beginning one year prior to the current planning period.

RESPONSE:

Please see table below and tab *Annual Renewable Generation* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Utility - Firm	2,165	3,255	3,714	4,587	5,476	6,611	7,855	9,278	10,640	11,858	12,810
Utility - Non-Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Purchase - Firm	617	531	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	7	25	71	161	226	313	379	464	530	616	676
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	1,044	1,494	1,853	2,228	2,618	2,952	3,169	3,397	3,638	3,891	4,120
Total	3,832	5,305	5,638	6,976	8,320	9,877	11,403	13,139	14,808	16,365	17,606
Notes											
(Include Notes Here)											

55. Please describe any actions the Company engages in to encourage production of renewable energy within its service territory.

RESPONSE:

DEF encourages renewable energy advancement within its service territory as it continues to educate, engage, and discuss Florida renewable policies and the need for cost-effective renewable energy that would contribute to reliable energy and fuel diversity in Florida. DEF continues to address inquiries about developing renewable energy projects or initiatives in the state. DEF continues to explore renewable energy production through good faith purchased power discussions with qualified parties. During 2023, DEF continued to engage attentive parties, customers, and potential companies interested in the production or use of renewable energy within the state.
In addition, DEF continues to educate and engage with interested parties at various industry conferences, local community events, and via our web site on renewable energy resources, interconnection processes, and innovative technologies. Please see our response to question #67 for further industry engagement.

56. **[Investor-Owned Utilities Only]** Please discuss whether the Company has been approached by renewable energy generators during the year prior to the current planning period regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.

RESPONSE:

DEF managed and connected about 17,000 requests in 2023 from customer-owned renewable energy generators and DEF responded to many more informal emails and phone inquiries. As the cost of solar PV technology continues to decline and subsidies remain, there continues to be interest from various customer segments trying to utilize, develop, install, and learn how to interconnect solar PV technology to the Florida power grid. DEF recorded about 10 inquiries in 2023 from potential large scale renewable energy generators and DEF responded to many more informal inquiries by email and phone conversations. This large-scale interest can be seen in the continued solar PV generator interconnection requests that DEF receives from speculative parties. As of December 31, 2023, DEF had over 3,600 MW of potential third-party solar PV generation projects in its interconnection queue. DEF continues to educate potential renewable energy generators on the Qualifying Facility criteria, FERC Orders, and structure requirements. DEF also educates on pricing, and obligations under FPSC Rules for a negotiated renewable power purchase agreement and an agreement for purchase of as-available energy. The renewable inquiries during 2023 were for potential renewable energy generators utilizing LNG, MSW, and solar PV technology.

57. Does the Company consider solar PV to contribute to one or both seasonal peaks for reliability purposes? If so, please provide the percentage contribution and explain how the Company developed the value.

RESPONSE:

DEF has assigned DEF owned solar PV generation an equivalent summer capacity value equal to 57% of the nameplate capacity of the planned installations from 2021 to 2024. DEF modeling derives an equivalent summer non-coincident, but on-peak-hour capacity value equal to 25% of the facility's nameplate rating for planned PV installations from 2025 to 2026 and 12.5% for 2027 and beyond. These assignments assume that the projects developed over the period of this plan will be single-axis tracking technology.

Other technologies may result in other values such as DEF's DeBary Solar Plant in a fixed tilt configuration has been assigned a 45% equivalent summer capacity value. DEF assigns no winter peak capacity value to solar PV. DEF recognizes that actual performance will differ from year to year; and may differ from the model and that the correlation to peak load will change as the amount of solar is installed and there are changes in the load behavior. As a result, DEF expects that these values may be revised further as additional solar PV power plants are in service and there is longer-term demonstrated operating data.

58. Please identify and describe any programs the Company offers that allows its customers to contribute towards the funding of specific renewable projects, such as community solar programs.

    a. Please describe any such programs in development with an anticipated launch date within the current planning period.

RESPONSE:

Duke Energy Florida continues to offer Clean Energy Connection, (CEC) which provides customers subscriptions to local clean energy. This program is an opportunity for our Florida customers who want access to renewable energy without the hassle, long term commitment or upfront installation costs or maintaining solar equipment.

Program participants subscribe to kilowatt (kW) blocks of power associated with the program's solar facilities for a fixed $8.35/kW monthly subscription fee, where each block represents 1 kw. This subscription fee supports the operation of these CEC solar facilities and is added to the customer's regular DEF bill. In return, the customer receives monthly bill credits and the RECs (renewable energy certificates) associated with their participation in the program.

The Program has allocations for all customer types includes low-income customers. Low-income participants pay a fixed monthly kW subscription fee and receive immediate and sustained savings, as the fixed credit rate on their bill is higher than their subscription fees.

In 2024, Clean Energy Impact was approved and launched. This program allows Duke Energy Florida customers an opportunity to buy locally generated RECs from facilities that are not part of the Clean Energy Connection program. Like Clean Energy Connection, no upfront costs nor installation on a customer's property is required. Participation in the program also benefits all Duke Energy Customers.

Finally, the Shared Solar Rider/Program was sunset at the end of 2023.

Energy Storage

59. Briefly discuss any progress in the development and commercialization of non-lithium-ion based battery storage technology the Company has observed in recent years.

RESPONSE:

Duke Energy continues to monitor and evaluate the market for non-lithium battery solutions. Duke Energy Emerging Technology Office is dedicated to investigating technologies, including non-lithium-ion battery storage. Those technologies include sodium sulfur, nickel hydrogen, iron air, flow storage, zinc hybrid, gravity storage, adiabatic compressed air energy storage, and electro-thermal energy storage. Duke Energy participates in development and testing of battery technologies through its partnerships with entities such as EPRI as well as research and pilot projects across the Duke Energy regulated and non-regulated companies. Duke Energy has a planned non-lithium long-duration storage pilot project in Suwannee County, FL that should be entering service in early 2025.

60. If applicable, please describe the strategy of how the Company charges and discharges its energy storage facilities. As part of the response discuss if any recent legislation, including the IRA has changed how the Company dispatches its energy storage facilities.

RESPONSE:

Energy storage assets directly connected through the Distribution system are dispatched through a combination of manual charge / discharge operations and schedules that automate their operation. The Lake Placid battery is operated in PV smoothing mode to minimize the 15-minute variability that results due to the variable nature of solar energy. Lake Placid is also operated through manual charge and discharge controls. To maximize the value of the Solar ITC taken for the Lake Plaid storage investment Duke Energy targets charging the asset >75% from solar energy. The company engages in evaluation and adjustment of strategies as needed.

61. Briefly discuss any considerations reviewed in determining the optimal positioning of energy storage technology in the Company's system (e.g., Closer to/further from sources of load, generation, or transmission/distribution capabilities).

RESPONSE:

Duke Energy considers energy storage to be another power grid operator tool or resource for distribution, transmission, and generation solutions. The optimal positioning is very project specific and is dependent upon the problem being solved and involves requesting feedback from experts within the company to provide guidance using appropriate data and tools. Ultimately, energy storage projects are compared to traditional tools or methods to determine if energy storage is in fact a low cost and optimal solution. For example, Duke Energy is evaluating solar power plants with adjacent battery storage as well as investigating solutions to distribution reliability closer to the customer loads. Duke Energy has also been focusing on opportunities to maximize the recently passed ITC for energy storage by locating future facilities in Energy Communities. Where feasible this will increase the ITC 10% thus improving project economics.

62. Please explain whether customers have expressed interest in energy storage technologies. If so, describe the type of customer (residential, commercial industrial) and how have their interests been addressed.

RESPONSE:

DEF's retail customers are showing an interest in energy storage by installing battery storage at their premise along with their customer-owned renewable generators. DEF continues to see a modest percentage of customers installing energy storage equipment in concert with participation in the state's net metering policy. DEF continues to carefully monitor this activity and the customer's battery project configuration. DEF's commercial and industrial customers have inquired about using energy storage in various forms, usually for business continuity whether post-hurricane or temporary interruptions. Some customers have developed their own backup power strategy. However, few have found battery storage external to their business as the best, economical solution to date. The customer is often looking for days of backup power which presently prices Li-ion technology out of consideration. DEF is currently exploring a pilot project involving customer sited batteries in the Orlando area.

63. Please refer to the Excel Tables File (Existing Energy Storage). Complete the table by providing information on all energy storage technologies that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.

RESPONSE:

Please see table below and tab *Existing Energy Storage* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
USF Microgrid Energy Storage Pilot	Y	7/8/2018	0.25	0.48	88.0%
Trenton	Y	12/21/2021	11.00	15.60	83.2%
Lake Placid BESS	Y	12/9/2021	17.28	50.60	83.5%
Cape San Blas	Y	2/10/2022	5.50	20.50	83.5%
Jennings	Y	4/5/2022	5.50	8.50	84.0%
Duke / UCF Long-Duration Energy Storage Project	Y	7/27/2022	0.01	0.04	75.0%
Micanopy	Y	8/5/2022	8.25	18.20	83.5%
John Hopkins Microgrid	Y	11/13/2023	2.475	23.5	83.5%
Notes					
(Include Notes Here)					

64. Please refer to the Excel Tables File (Planned Energy Storage). Complete the table by providing information on all energy storage technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

RESPONSE:

Please see table below and tab *Planned Energy Storage* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables*.

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Projected Max Capacity Output (MW)	Projected Max Energy Stored (MHh)	Projected Conversion Efficiency (%)
Suwannee LDES	Y	2/25/2024	5	40	0.75
Powerline BESS	N	3/1/2027	100	200	0.85
Vision Florida Residential Battery Pilot	Y	7/1/2024	0.362	0.972	0.85
Notes					
(Include Notes Here)					

65. Please identify and describe the objectives and methodologies of all energy storage pilot programs currently running or in development with an anticipated launch date within the current planning period. If the Company is not currently participating in or developing energy storage pilot programs, has it considered doing so? If not, please explain.

    a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.

    b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the current planning period.

    c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

RESPONSE:

a. Duke Energy is currently testing the energy storage projects as part of the 50 MW battery energy storage pilot program identified in the 2017 DEF Settlement Agreement. The pilot program is studying how energy storage is a cost-effective tool to improve customer reliability, defer or eliminate traditional distribution investment, and improve system operations at universal solar assets.

b. DEF expects the current pilot program as well as future energy storage projects will help to better optimize the best blend of multiple use battery locations which may system balancing, capacity, and energy arbitrage values. These will include projects to mitigate intermittency from solar power and improve the coincidence between renewable generation and load. DEF also expects to better understand the benefits of energy storage as a key component of localized resiliency for locations as well as future uses of batteries to harden the local grids for counties and municipalities. As costs continue to decline on Li-ion batteries and perhaps other technologies provide additional paths to energy storage, storage will become a part of the myriad of tools DEF deploys to optimize grid resiliency and reduce certain transmission or distribution congestion/redundancy needs.

c. Duke Energy plans to update the Commission on the status of our energy storage pilot programs during future Ten Year Site Plan filings and during any ad hoc requests made by the Commission.

66. If the Company utilizes non-firm generation sources in its system portfolio, please detail whether it currently utilizes or has considered utilizing energy storage technologies to provide firm capacity from such generation sources. If not, please explain.

    a. Based on the Company's operational experience, please discuss to what extent energy storage technologies can be used to provide firm capacity from non-firm generation sources. As part of your response, please discuss any operational challenges faced and potential solutions to these challenges.

RESPONSE:

Solar generation is an intermittent or non-firm resource reliant on weather conditions coupled with time of day to allow for appropriate solar irradiation to create power output for the grid. Excess energy can be used to charge an energy storage system to firm the output of the site in case of a change in cloud cover. Winter peak load demand does not coincide with peak solar generation output. Power stored in energy storage systems during the day can be discharged prior to sunrise or after a sunset to provide more consistent output on a predictable, scheduled basis. DEF continues to examine this opportunity for providing additional firm capacity.

a. DEF has been testing the DC coupled energy storage located at the Lake Placid Solar Facility. The asset primarily operates in PV smoothing mode but can be dispatched provide firm capacity from the solar facility.

Other

67. Please identify and discuss the Company's role in the research and development of utility power technologies, including, but not limited to research programs that are funded through the Energy Conservation Cost Recovery Clause. As part of this response, please describe any plans to implement the results of research and development into the Company's system portfolio and discuss how any anticipated benefits will affect your customers.

RESPONSE:

Through our research and development efforts, Duke Energy's Emerging Technology Office continuously reviews technology trends, works with Florida universities, and Florida renewable focused organizations to find benefits for our customers. We are active in industry groups such as FSEC, FCG, the Electric Power Research Institute (EPRI), national labs (NREL, ORNL, PNNL, etc.) and the U.S. Department of Energy (DOE), where we collaborate with government, other utility, and industry experts on emerging technologies, including renewables and emission-free resources. The goal of our work is to monitor and assess technology readiness to solve current and future power system issues whether they be behind the meter or universally grid tied. New technologies like microgrids, energy storage, battery energy storage coupled with solar PV, long-duration battery storage, green hydrogen, and grid-connected/controlled devices are being tested to enable the Company to meet evolving customers' needs.

Environmental

68. Please explain if the Company assumes carbon dioxide (CO_2) compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative, answer the following questions:

    a. Please identify the year during the current planning period in which CO_2 compliance costs are first assumed to have a non-zero value.

    b. [Investor-Owned Utilities Only] Please explain if the exclusion of CO_2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.

    c. [Investor-Owned Utilities Only] Please provide a revised resource plan assuming no CO_2 compliance costs.

RESPONSE:

DEF did not assume CO_2 compliance costs in the resource planning process used to generate the resource plan presented in the current TYSP.

a. N/A

b. N/A
c. N/A

69. Provide a narrative explaining the impact of any existing environmental regulations relating to air emissions and water quality or waste issues on the Company's system during the previous year. As part of your narrative, please discuss the potential for existing environmental regulations to impact unit dispatch, curtailments, or retirements during the current planning period.

RESPONSE:

There was one occurrence of impact to unit dispatch, curtailments, or retirements during 2023 due to environmental regulations. This event on Hines 4B was due to CEMs equipment failure when the unit was shut down because emissions readings were not available. DEF is not planning to retire any units in the current planning period as a response to existing environmental regulations. In the past DEF has experienced curtailments of some units related to water temperature restrictions. Because these events are weather related, there is no anticipated curtailment in the plan.

70. For the U.S. EPA's Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units Rule:

a. Will your Company be materially affected by the rule?

b. What compliance strategy does the Company anticipate employing for the rule?

c. If the strategy has not been completed, what is the Company's timeline for completing the compliance strategy?

d. Will there be any regulatory approvals needed for implementing this compliance strategy? How will this affect the timeline?

e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Refer to the Excel Tables File (Emissions Cost). Complete the table by providing information on the costs for the current planning period.

f. If the answer to any of the above questions is not available, please explain why.

RESPONSE:

a. No, DEF has not been materially affected by the EPA's "Standards of Performance for Greenhouse Gas Emissions from New, Modified and Reconstructed Stationary Sources: Electric Utility Generating Units" (CO2 NSPS) final rule. DEF does not anticipate any reliability impacts of this rule. Due to ongoing litigation, EPA is evaluating the potential to regulate additional units and pollutants under Section 112 of the Clean Air Act. The current CO2 NSPS rules remain in effect pending outcome of the review. DEF will continue to monitor the status of the rule and any proposed changes to ascertain any further compliance steps that may be required.

b. While DEF's existing facilities are not materially affected by the rule, DEF will ensure that all future "New" generating facilities comply with standards and will monitor maintenance and compliance activities related to existing facilities that could potentially result in the facilities being identified as "Modified" or "Reconstructed" stationary sources under the rule.

c. N/A

d. There are no specific regulatory approvals identified as associated with compliance with this rule.

e. Please see the table below and tab *Emissions Cost* of the Excel File *2024 TYSP - Data Request #1 - Excel Tables.xlsx.*

Year	Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (Present-Year $ millions)			
	Capital Costs	O&M Costs	Fuel Costs	Total Costs
2021	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
Notes				
(Include Notes Here)				

71. Explain any expected reliability impacts resulting from each of the EPA rules listed below. As part of your explanation, please discuss the impacts of transmission constraints and changes to units not modified by the rule that may be required to maintain reliability.

a. Mercury and Air Toxics Standards (MATS) Rule.

b. Cross-State Air Pollution Rule (CSAPR).

c. Cooling Water Intake Structures (CWIS) Rule.

d. Coal Combustion Residuals (CCR) Rule.

e. Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.

f. Affordable Clean Energy Rule or its replacement.

g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.

RESPONSE:

a. Mercury and Air Toxics Standards (MATS) Rule.
DEF has provided its compliance strategy for MATS in the Integrated Clean Air Compliance Plan submitted to the Commission on March 29, 2019 in Docket 20190007-EI and updated in Docket 20210007-EI. This compliance strategy has been implemented and there are no reliability impacts from this regulation.

b. Cross-State Air Pollution Rule (CSAPR).
DEF sources are not subject to CSAPR and therefore there are no reliability impacts from this regulation.

c. Cooling Water Intake Structures (CWIS) Rule.
DEF has provided updates on the compliance strategy for CWIS at the Crystal River station in the testimony provided to the Commission on April 1, 2021, Docket No 20210007-EI. There are no reliability impacts from this regulation.

As explained in the prior testimonies of DEF witnesses Patricia West and Kim McDaniel in Dockets 20170007-EI, 20180007-EI, and 20190007-EI, DEF has been conducting 316(b) studies at the Anclote and Bartow stations and study results, along with proposed compliance strategies, were filed with the Florida Department of Environmental Protection ("FDEP") in July and August 2020, respectively, as part of the NPDES renewal process. The Bartow NPDES permit renewal was issued on January 12, 2023, including a schedule to install modified traveling screens and organism return in compliance with the 316(b) rule within 5 years from issuance of the renewed permit. The draft Anclote NPDES permit was issued on February 5, 2024, and the final permit is expected to be issued in spring 2024. Therefore, the full extent of compliance activities at Anclote cannot be determined until FDEP's review of the proposed options has been completed and the NPDES permit renewal issued. There are no reliability impacts anticipated with the proposed compliance strategies.

d. Coal Combustion Residuals (CCR) Rule.
In accordance with the Environmental Protection Agency's CCR contained in 40 CFR Parts 257 and 261, there have been no reliability issues to DEF nor DEF's customers resulting from implementation / compliance with this rule. In 2021 DEF completed the

installation of a liner system in the existing sedimentation basin and west ditch. The liner system was installed as a corrective measure to address groundwater quality impacts. Actions to address groundwater exceedances and comply with groundwater assessment mandates resulting from the CCR landfill are described in Docket No. 20190007-EI, approved by PSC-2019-0500-FOF-EI, and updated in Docket Nos. 20200007-EI, 20210007-EI, and Docket No. 20220007-EI. This compliance strategy is not expected to have any impacts on reliability.

e. Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.
The "new" units (Citrus Combined Cycle Units) affected by these standards meet the compliance requirements outlined in the rule. This compliance strategy is not expected to have any impacts on reliability.

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

g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.
On November 22, 2019, EPA published a revised ELG rule with proposed changes to the FGD effluent and bottom ash transport water limits. EPA published the final ELG Reconsideration Rule on October 13, 2020, with an effective date of December 14, 2020. DEF has evaluated the changes in the ELG Reconsideration Rule and has determined that modifications completed at the Crystal River North station in 2020 under the original rule satisfy the requirements of the ELG Reconsideration Rule. On March 29, 2023, EPA requested comments regarding a proposed rule ("2023 Proposed Rule") revising the Agency's 2020 ELG Reconsideration Rule. The 2023 Proposed Rule includes a proposal for zero-discharge limitation for all pollutants in FGD wastewater and Bottom Ash Transport Water and numeric discharge limitations for mercury and arsenic in Combustion Residual Leachate. These proposed limits, should they become final, could require implementation of additional modifications at the Crystal River Units 4&5 Station. The FDEP renewed the NPDES permit for Crystal River Units 4 and 5 on October 23, 2023, and appropriately applied the 2020 Reconsideration Rule provisions with which the facility

is fully compliant. The final revised ELG rule is expected during the second quarter of 2024. There are no anticipated reliability impacts from this rule.

72. Please refer to the Excel Tables File (EPA Operational Effects). Complete the table by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

RESPONSE:

Please see the table below and tab *EPA Operational Effects* of the Excel File *2024 TYSP - Data Request #1– Excel Tables*.xlsx.

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	Convert to NG	Convert to NG	Impacted	NA	NA
Anclote 2	Steam	NG	505							
P L Bartow	CC	NG	1,112	NA	NA	NA	Dispatch Changes	Impacted	NA	NA
Citrus Combined Cycle	CC	NG	1,610	NA	NA	NA	NA	Compliant as Constructed	NA	NA
Crystal River 4	Steam	Coal	712	Impacted	Impacted	Reagent, CEMS	FGD, SCR, Dispatch	Impacted	Impacted	NA
Crystal River 5	Steam	Coal	698							
Osprey	CC	NG	245	NA	NA	NA	NA	NA	NA	NA
Hines PB1-4	CC	NG	2,081	NA	NA	NA	Dispatch Changes	NA	NA	NA
Notes										
(Include Notes Here)										

73. Please refer to the Excel Tables File (EPA Cost Effects). Complete the table by identifying, for each unit impacted by one or more of the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.

RESPONSE:

Please see the table below and tab *EPA Cost Effects* of the Excel File *2024 TYSP - Data Request #1– Excel Tables*.xlsx.

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR $ millions)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	0	0	15-130	NA	NA
Anclote 2	Steam	NG	505			0	0		NA	NA
P L Bartow	CC	NG	1112	NA	NA	0	0	20 - 50	NA	NA
Crystal River 4	Steam	Coal	712	TBD	TBD	0	0	1 - 3	TBD	0
Crystal River 5	Steam	Coal	698			0	0			
Notes										
(Include Notes Here)										

74. Please refer to the Excel Tables File (EPA Unit Availability). Complete the table by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

RESPONSE:

Please see the table below and tab *EPA Unit Availability* of the Excel File *2024 TYSP - Data Request #1– Excel Tables*.xlsx.

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	NA	NA	TBD	NA	NA
Anclote 2	Steam	NG	505	NA	NA	NA	NA	TBD	NA	NA
P L Bartow	CC	NG	1,112	NA	NA	NA	NA	TBD	NA	NA
Citrus Combined Cycle	CC	NG	1,610	NA	NA	NA	NA	NA	NA	NA
Crystal River 4	Steam	Coal	712	TBD	TBD	NA	NA	NA	TBD	NA
Crystal River 5	Steam	Coal	698	TBD	TBD	NA	NA	NA	TBD	NA
Osprey	CC	NG	245	NA	NA	NA	NA	NA	NA	NA
Hines 1-4	CC	NG	2,081	NA	NA	NA	NA	NA	NA	NA
Notes										
(Include Notes Here)										

75. If applicable, identify any currently approved costs for environmental compliance investments made by your Company, including but not limited to renewable energy or energy efficiency measures, which would mitigate the need for future investments to comply with recently finalized or proposed EPA regulations. Briefly describe the nature of these investments and identify which rule(s) they are intended to address.

RESPONSE:

DEF's currently approved costs for environmental compliance investments which may be considered in the EPA's future CO2 regulations include plant conversions to natural gas, coal resource retirements, and utilizing advanced natural gas technologies as discussed in detail in question #71. These plans were undertaken to address the requirements of various new or forthcoming rules. The retirement of Crystal River units 1 and 2 in response to MATS and the Regional Haze rule also reduced the impacts of the CCR rule, the CWIS rule and updates to the State Implementation Plan to achieve attainment with SO2 and Ozone National Ambient Air Quality Standards (NAAQS). This retirement reduced DEF's CO2 footprint. The conversion of the two units at Anclote to natural gas firing in response to MATS similarly reduced priority pollutant emissions and the resultant risk around future updates to the NAAQS as well as CO2 emissions.

Until the EPA's CO2 emission reduction regulations are clearly defined, DEF can only estimate which investments would contribute to compliance and to what degree. DEF does, however, have some approved renewable energy and energy efficiency investments, recovered or administered under the energy conservation cost recovery clause that may mitigate the need for some limited future investments that may be contemplated in the EPA's future CO2 regulations; and, finally, DEF continues to evaluate clean energy technologies and prudently prepare now for a CO2 constrained future.

Fuel Supply & Transportation

76. Please refer to the Excel Tables File (Fuel Usage & Price). Complete the table by providing, on a system-wide basis, the actual annual fuel usage (in GWh) and average fuel price (in nominal $/MMBTU) for each fuel type utilized by the Company in the 10-year period prior to the current planning period. Also, provide the forecasted annual fuel usage (in GWh) and forecasted annual average fuel price (in nominal $/MMBTU) for each fuel type forecasted to be used by the Company in the current planning period.

RESPONSE:

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil		Hydrogen	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2014	-	-	11,729	3.98	22,953	5.66	-	-	76	21.97	-	-
	2015	-	-	9,718	3.72	25,227	4.67	-	-	73	22.30	-	-
	2016	-	-	8,885	3.62	24,807	4.09	-	-	77	18.66	-	-
	2017	-	-	8,722	3.44	27,307	4.26	-	-	62	16.43	-	-
	2018	-	-	8,422	3.20	28,687	4.52	-	-	90	19.80	-	-
	2019	-	-	4,322	3.66	35,170	3.93	-	-	33	20.36	-	-
	2020	-	-	3,287	3.66	36,327	3.37	-	-	33	22.28	-	-
	2021	-	-	5,042	3.03	34,517	5.28	-	-	61	20.27	-	-
	2022	-	-	4,375	4.58	36,423	8.50	-	-	146	22.63	-	-
	2023	-	-	3,829	4.61	35,526	4.16	-	-	29	26.51	-	-
Projected	2024	-	-	2,157	3.37	36,625	3.59	-	-	7	21.01	-	-
	2025	-	-	1,920	3.86	37,314	4.17	-	-	5	19.75	-	-
	2026	-	-	1,639	3.99	37,194	4.22	-	-	2	18.89	-	-
	2027	-	-	1,539	3.98	36,537	4.19	-	-	6	17.51	-	-
	2028	-	-	1,370	4.07	36,197	4.17	-	-	17	17.55	-	-
	2029	-	-	1,395	3.96	35,521	4.15	-	-	11	17.95	-	-
	2030	-	-	1,569	3.93	34,714	4.20	-	-	7	18.30	-	-
	2031	-	-	1,617	4.16	33,083	4.33	-	-	10	18.61	-	-
	2032	-	-	1,519	4.40	32,668	4.56	-	-	11	19.03	-	-
	2033	-	-	1,873	4.47	31,801	4.82	-	-	10	19.40	-	-
Notes													
(Include Notes Here)													

77. Please discuss how the Company compares its fuel price forecasts to recognized, authoritative independent forecasts.

RESPONSE:

DEF's fuel price forecasts are developed based on the forward market price for the first five years, followed by the long-term fundamental forecast beyond year five. The fundamental forecast is created as a composite of several nationally recognized fuel forecasts including both publicly available data (e.g. EIA) and purchased proprietary forecasts prepared by major consulting companies.

As part of its forecast comparison process, Duke Energy compares its composite fundamental commodity price outlooks to a range of individual forecasts, including both public forecasts like EIA, and proprietary outlooks from other leading energy consultants. Duke Energy also compares supply and demand fundamentals where they are available to review the underlying drivers. Natural gas and distillate fuel oil are widely traded commodities with multiple forecasts although these forecasts are influenced by views of not only domestic supply and demand effects, but also international market trends. Coal price forecast comparisons are more tenuous given the limited number of qualified outlooks, the significance of transportation cost and the non- homogeneous nature of the commodity itself. Duke Energy utilizes direct comparisons for select coal product qualities widely available in the market. Since the objective of Duke Energy fundamental forecasting process is to produce a comprehensive internally consistent forecast, Duke Energy also performs checks that the final price forecast is intuitively aligned with the supply/demand balances across the various commodities.

78. Please identify and discuss expected industry trends and factors for each fuel type listed below that may affect the Company during the current planning period.

a. Coal

b. Natural Gas

c. Nuclear

d. Fuel Oil

e. Other (please specify each, if any)

RESPONSE:

a. Coal

Over the course of 2023, near term coal pricing for CAPP, NAPP and ILB regions declined from the historically high levels in 2022 in response to low natural gas prices and an overall lack of generation demand. On average, in the first year of the period the high-sulfur high chlorine Illinois basin coal prices generally are in the low $40's per ton increasing to the mid to upper-$50's for the balance of the period, while Illinois basin low chlorine coal prices are ~$43 per ton increasing to upper-$60's per ton in the back half of the period. Central Appalachia coal prices in the first year of the period are ~$69 per ton increasing to the low to mid-$80's before breaking $90 per ton in the last year of the period; Northern Appalachia coal prices are ~$51 per ton increasing to the low to mid-$60's across the period; Powder River Basin coal prices are in the mid-teens escalating to the high teens; and Colorado coal prices are $51 per ton in the first year of the period declining to the high-$40's before rebounding to the low-$50's in the back half of the period.

Coal demand is primarily driven by changes in electric power consumption and is expected to continue to be volatile based on changes in natural gas pricing, weather driven demand, purchase power costs, increasing availability of renewable generation, and export demand. Looking forward, coal markets continue to experience a high degree of market volatility due to a number of factors, including: (1) the inability of coal suppliers to respond timely to changes in demand; (2) natural gas price volatility; (3) continued uncertainty regarding proposed and imposed U.S. Environmental Protection Agency ("EPA") regulations for power plants; (4) global demand for both steam and metallurgical coal; (5) tightened access to investor financing; (6) continued shifts in production from thermal to metallurgical coal as producers move away from supplying declining electric generation to take advantage of increasing demand from industry; and, (7) continued labor and resource constraints further limiting suppliers' operational flexibility. International coal pricing assumptions are not currently accounted for in long-term fundamental price modeling. In the future if domestic coal supply becomes increasingly constrained, importing international supply may become necessary to ensure adequate supply.

b. Natural Gas

Over the planning horizon there are a number of trends that could have an impact on natural gas prices, and the overall supply and demand for domestic natural gas. First, is the level of production of domestic natural gas, particularly from associated gas. Second, is the forecasted growth in the use of natural gas from electric power generation, and the industrial sector. Third, is the level of natural gas exports via pipelines to Mexico, and LNG to the global natural gas market from U.S. export facilities.

The U.S. Energy Information Agency ("EIA") routinely publishes a long-term forecast of energy market fundamentals that is used as a guide for long term planning. The next update is expected in 2025 as the EIA is currently working to implement changes as they require "substantial updates to better model hydrogen, carbon capture, and other emerging technologies". In their current 2023 reference case, the EIA projects total U.S. dry natural gas production to grow from 100 Bcf/day in 2023 to approximately 104 Bcf/day on average for 2032. Permian Basin is the primary driver behind associated dissolved natural gas growth. Increases in shale gas production mainly comes from the Texas-Louisiana Salt Basin and the Appalachian Basin. Additional production growth from the Marcellus and Utica plays in the Appalachia region could be limited by the lack of new pipeline infrastructure projects. In 2032, the EIA reference case forecasts domestic natural gas consumption will be approximately 76 Bcf/day, with a total volume of net exports at approximately 27 Bcf/day. Power generation is expected to be approximately 19.5 Bcf/day of the domestic natural gas demand in 2032. U.S. LNG exports reached 11.9 Bcf/d in 2023 and are expected to grow to an average of 22 Bcf/d in 2032. Current US LNG exports are limited to approximately 14 Bcf/day until additional infrastructure is completed at end of 2024.

Across all cases, domestic production outpaces domestic consumption putting downward pressure on prices over the planning horizon from 2023 through 2032. In 2023, spot prices at the Henry Hub averaged $2.74 per MMBtu and, according to the EIA long-term forecast, are expected to average $3.21 by 2032 (in real terms).

c. Nuclear

DEF has retired the Crystal River 3 Nuclear plant and does not plan to add a new nuclear unit in the ten-year horizon. Therefore, it does not expect to be significantly impacted by trends and factors of nuclear fuel.

d. Fuel Oil

With respect to industry trends, per the EIA's Short Term Energy Outlook (STEO) for 2024 published in March 2024, expectations are for reduced global production volumes driven mostly by the extension of OPEC+ production cuts. The lower production volumes contribute to significant global oil inventory declines in the second quarter of 2024. Because of the falling inventories, expectations are for Brent crude spot prices to average $88 per barrel in 2Q24 and WTI to average $83 for the same period. The STEO expects Brent Crude to average $87 per barrel for the full year 2024 with WTI projected to average $82 per barrel for the same period. Actual price outcomes will be dependent on the ongoing unrest in the Middle East and the degree to which existing sanctions imposed on Russia, any potential future sanctions, and independent corporate actions affect Russia's oil production or the sale of Russia's oil in the global market. In addition, the degree to which other oil producers respond to current oil prices, as well as the effects macroeconomic developments might have on global oil demand, will be important for oil price formation in the coming months. EIA's Short Term Energy Outlook forecasts that global consumption of petroleum and liquid fuels will average 102.4 million b/d for all of 2024, up 1.4 million b/d from 2023, and forecast that consumption will increase by 1.4 million b/d in 2025 to average 103.8 million b/d.

DEF will continue to monitor oil prices, trends and its fuel forecast over time and will procure needed fuel oil supply and transportation services to meet its generation fleet needs over the planning horizon. As new information becomes available, DEF will monitor this information for potential developments.

79. Please provide a comparison of the Utility's 2023 actual fuel price forecast and the actual 2023 delivered fuel prices.

RESPONSE:

Please see table below and tab *2023 Fuel Prices-FCastvsActual* of the attached Excel File *2024 TYSP - Data Request #1.Excel Tables_Q79*.

Year		Coal		Natural Gas		Distillate Oil	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Projected	**2023**	1,233	7.52	36,532	6.52	1	21.33
Actual	**2023**	3,829	4.61	35,526	4.16	29	26.51
Notes							
(Include Notes Here)							

Projected values include commodity price and variable transportation cost.
Actual values include commodity price, variable and fixed transportation cost, surcharge deliver costs, and cost of existing inventory (coal sitting on the pile, oil in the tanks).

80. Please explain any notable changes in the Utility's forecast of fuel prices used to prepare the Utility's current TYSP compared to the fuel process used to prepare the Utility's prior TYSP.

RESPONSE:

DEF's 2024 TYSP is based on fuel forecasts developed in the Fall of 2023. Markets continue to change based on both near term and projected long-term factors. Although Markets in 2023 continued to be affected by impacts due to the war in Ukraine and other disruptive market events, the overall trend in 2023 was one of recovery to the pre-COVID, pre-Ukraine norm. US markets adjusted for higher LNG demand in a way that allowed a steady decline in prices to a point roughly on par with pre-2022 prices. As a result, lingering impacts of the 2022 price spike are forecast to be almost entirely absent from the forward forecast for 2024 and beyond. On average DEF's Fall 2023 forecast projects natural gas prices to be approximately 20% below the Fall 2022 forecast. DEF forecasts natural gas prices to be below the long-term fundamentals and generally stable for the next several years before generally rising beyond 2030.

Coal prices have also returned to pre-COVID levels and are expected to remain stable for the next three to five years. The 2022 Fall forecast projected an extended period of high price hangover from the 2022 fuel price spike. Movement in the spot market has removed this from the near-term forecast. On average DEF's Fall 2023 forecast projects coal prices to be approximately 28% below the Fall 2022 forecast. In general, the Fall 2023 forecast shows that coal prices are moving in a very similar trend to the gas prices over the next 10 years. Distillate oil comprises a very small portion of DEF's annual fuel cost. The price of distillate oil moves with worldwide economic trends and is closely tied to forces in the transportation fuel market. Overall, DEF's 2023 Fall fuel forecast is unchanged from the 2022 Fall forecast over the next 5 years and higher by approximately 10% over the 10-year period.

81. Please identify and discuss steps that the Company has taken to ensure natural gas supply availability and transportation over the current planning period.

RESPONSE:

DEF has broad contacts and relationships with natural gas suppliers and pipeline transportation providers. DEF performs short-term and long-term fuel forecasts to project estimated fuel usage for future periods. The short-term forecasts typically cover a period of five years, and the long-term forecasts cover years six through year twenty. Fuel forecasts includes items such as, but not limited to, load forecasts, fuel and emission prices, operational specifics of owned generation and contracted generation resources, wholesale power sales agreements, and unit maintenance schedules. The short-term forecast is performed approximately four times per year for a five-year period and currently covers years 2024 through 2029. The long-term forecast is performed two times per year and currently covers years 2029 through 2049.

To ensure that DEF has the needed natural gas supply to meets its generation needs over the planning horizon, DEF performs periodic competitive natural gas supply Request for Proposals ("RFP's") and market solicitations to procure the needed competitively priced natural gas supply consistent with its procurement approach. In addition, DEF also monitors potential pipeline expansion projects that can access competitively priced and secure natural gas for delivery to DEF's facilities. DEF monitors potential pipeline expansions through on-going discussions and periodic meetings with gas suppliers and pipeline providers, open seasons issued by pipelines, industry events, and publications.

82. Please identify and discuss any existing or planned natural gas pipeline expansion project(s), including new pipelines and those occurring or planned to occur outside of Florida that would affect the Company during the current planning period.

RESPONSE:

The project descriptions outlined below are not intended to be an all-inclusive or exhaustive list of all the upstream pipeline projects that are in-service or proposed in the Gulf Coast and Southeast region, but those that DEF believes could have an impact on the natural gas supply available for DEF and the State of Florida.

Callahan Pipeline

Status: In-service as of November 2020

Peoples Gas expanded its natural gas service in Jacksonville, Fla., with the construction the Callahan Pipeline project. The pipeline starts at the Southern Natural Gas Cypress Interstate Pipeline in Callahan and travels east to Highway 17 in Yulee. The initiative was done through a partnership with Florida Public Utilities Co (FPU). TECO's affiliate, SeaCoast Gas Transmission, and FPU's affiliate, Peninsula Pipeline Co. Inc., are jointly developing the Callahan Pipeline. This will help the Company meet current and future natural gas demand in the Jacksonville area, including the planned Eagle LNG export terminal. The Eagle LNG project filed with the FERC on March 10, 2023, requesting authorization to commence construction and initial site preparation activities. Since then, they have stated that the project is "In Holding Pattern". If completed, Eagle is expected to be capable of exporting up to 49.8 Bcf of LNG per year.

Sabal Trail Transmission

Status: Phases I & II In-Service, Phase III Extension Approved Until May 1, 2025

Sabal Trail Transmission, LLC is a joint venture of Spectra Energy Corp (an Enbridge subsidiary), NextEra Energy, and Duke Energy. Sabal Trail is an approximately 515-mile interstate pipeline extending from Transco Station 85 in Choctaw County, Alabama to the Central Florida Hub. It interconnects with FGT, Gulfstream, and the Florida Southeast Connection in Osceola County, Florida. Sabal Trail's Phase I facilities were placed into full commercial service on July 3, 2017. The full Phase I capacity of the Sabal Trail pipeline is 830,000 Dth/day with the ability to scale-up its design capacity of 1.1 Bcf/day with the implementation of the third and final phase. Adding this additional pipeline into the State will increase overall direct onshore supply access to the State of Florida. Sabal Trail has two foundation shippers, Florida Power & Light and DEF.

Transco - Hillabee Expansion Project

Status: Phases I & II In-Service, Phase III not yet under construction

The Transco Hillabee Expansion Project will provide 1,131,730 MMBtu/day of incremental firm capacity in three phases. It originates at Transco Station 85 in Choctaw County, Alabama to a proposed interconnection between Transco and Sabal Trail in Tallapoosa County, Alabama. Sabal Trail acquired 100% of the project capacity via a long-term lease to provide Sabal Trail shippers gas supply access at Transco Station 85. Construction for Phase 1 began in 2016 and was placed in-service in July 2017. Phase II began construction in May of 2019 and was placed in-service on April 13, 2020. Phase III has yet to begin construction.

MS Hub Expansion

Status:

On March 5th, 2024 MS Hub filed an application with the FERC for CPCN to expand the MS Hub gas storage facility located in Mississippi by constructing three new caverns totally approximately 30 BCF of working capacity, along with associated compression and ancillary facilities. MS Hub has existing interconnects with SESH, Sonat and Transco that can reach the Florida market and provide access to increased storage capability.

83. Please identify and discuss expected liquefied natural gas (LNG) industry factors and trends that will impact the Company, including the potential impact on the price and availability of natural gas, during the current planning period.

RESPONSE:

LNG exports are projected to remain at or near full export capabilities which is currently approximately 14 Bcf/day. This is due to the robust spread between United States natural gas prices and global LNG prices which is expected to continue through 2032. EIA projects LNG exports to average 12.4 Bcf/d in 2024, a 1.3% increase from 2023. According to the Federal Energy Regulatory Commission (FERC) there are currently 7 LNG export terminals that are approved by FERC and under construction and 10 more terminals that are approved but not yet under construction. Projects under construction could add an additional almost 17 Bcf/day of export capacity for a total of 31 Bcf/day. Current pause in DOE non-FTA approvals could impact timing of projects pending approval beyond 2027.

The future trends of U.S. LNG exports are difficult to predict as it can be impacted by both domestic and global developments over the long-term period. These factors include, but are not limited to, global natural gas prices, fundamentals of supply and demand, storage levels, economic cycles, and government regulations. DEF will continue to monitor LNG infrastructure projects and exports from these facilities.

84. Please identify and discuss the Company's plans for the use of firm natural gas storage during the current planning period.

RESPONSE:

DEF utilizes firm natural gas storage as part of its overall gas fuel contract portfolio. DEF has agreements with Bay Gas Storage Company LTD ("Bay Gas") and SG Resources Mississippi LLC ("Southern Pines") for firm storage capacity. Both gas storage facilities are directly connected to interstate pipelines (FGT, Gulfstream, SESH and Transco) on which DEF currently holds firm transportation. Bay Gas and Southern Pines both provide DEF with greater supply reliability, operational flexibility, and price protection during severe weather events and pipeline operational flow orders. DEF expects high deliverability storage to continue to be a critical component of its overall natural gas contract portfolio throughout the planning period. DEF will continue to evaluate any additional needs or changes in firm gas storage capacity throughout the planning period.

85. Please identify and discuss expected coal transportation industry trends and factors, for transportation by both rail and water that will impact the Company during the current planning period. Please include a discussion of actions taken by the Company to promote competition among coal transportation modes, as well as expected changes to terminals and port facilities that could affect coal transportation.

RESPONSE:

With respect to transportation by rail, several years of steep declines in coal generation demand combined with increased mining costs, along with increasing labor and resource constraints, continues to apply pressure for coal transported by rail to be cost competitive. Additionally, increased demand for coal in foreign countries could put pressure on the railroads infrastructure to transport coal to the ports for export shipments. Declining demand for coal in the utility sector has also driven rail transportation providers to modify their business models to be less dependent on coal related transportation revenues. Although rail transportation providers are required to provide rail service, the Company's rail transportation providers have limited resources to adapt to significant changes in scheduling demand resulting from the Company's burn volatility, specifically in higher than forecasted coal burn scenarios. DEF maintains communications with the rail transportation providers and actively monitors and explores opportunities to maintain rail transportation to its coal generating station. DEF expects the coal market will remain volatile during the planning period and that access to rail transportation will continue to provide flexibility to respond to rapidly changing generation needs.

With respect to water transportation, because of the addition of scrubbers to many coal generation plants in the Midwest and Southeast, use of higher sulfur coal originating from the Illinois Basin remains the primary fuel source with the main mode of transportation from this region being via water. Here again, several years of steep declines in coal generation demand combined with increased mining costs, along with increasing labor and resource constraints continues to apply pressure for waterborne coal deliveries to be cost competitive. Declining demand for coal in the utility sector has also driven waterborne transportation providers to be less dependent on coal related transportation revenues as competition for barging capacity has increased. DEF expects waterborne transportation to remain a key component of its transportation portfolio during the planning period and maintains communications with the river and gulf barge transportation providers as well as its coal suppliers to actively explore opportunities to maintain cost competitive waterborne transportation to its coal generating station. Over the planning period, the Company expects terminal services in the Gulf to continue to play a role in waterborne purchases.

Having the ability to transport coal via waterborne barge and rail transportation creates opportunities for competition between transportation modes while also allowing DEF to mitigate unfavorable weather conditions and continue reliable deliveries. Additionally, the ability to take coal from various coal basins promotes competition between the different modes of transportation as well as the competition of coal pricing between coal basins. DEF expects the coal market will remain volatile during the planning period and having varying modes of transportation will continue to provide valuable flexibility. DEF continues to monitor and explore opportunities to maintain competition between water and rail delivery of coal.

86. Please identify and discuss any expected changes in coal handling, blending, unloading, and storage at coal generating units during the current planning period. Please discuss any planned construction projects that may be related to these changes.

RESPONSE:

Coal handling, blending, unloading, and storage requirements for coals from different basins are a consideration when determining coals to purchase. Expected decreases in demand over the planning period are in turn expected to reduce coal handling and unloading activities at the Company's coal generating units. The Company expects to continue to require on-site resources to manage its contractional obligations. The Company also expects that terminal services in the Gulf, while continuing to facilitate coal blending, may play a decreasing role over the planning period as demand declines. Continuous communications with the station, terminal facilities, river and gulf barge companies, railroads, and suppliers are critical for DEF's coal transportation strategy in the future.

87. Please identify and discuss the Company's plans for the storage and disposal of spent nuclear fuel during the current planning period. As part of this discussion, please include the Company's expectation regarding short-term and long-term storage, dry cask storage, litigation involving spent nuclear fuel, and any relevant legislation.

RESPONSE:

The United States Federal Government is legally obligated to take title and possession of all spent nuclear fuel. DEF will utilize on-site dry storage until the government fulfills its contractual obligations. All fuel at Crystal River #3 has been moved into dry cask storage. Reimbursement for costs incurred to store fuel on site is expected if the storage is as a result of the DOE's breach of the standard contract for disposal of spent nuclear fuel. DEF cannot predict what future actions the government will take to fulfill its contractual obligations. The Nuclear Waste Policy Act of 1982, as amended cannot be changed except by an act of Congress.

88. Please identify and discuss expected uranium production industry trends and factors that will affect the Company during the current planning period.

RESPONSE:

DEF has retired the Crystal River 3 Nuclear plant and does not plan to add a new nuclear unit in the ten-year horizon. Therefore, it will not be affected by uranium production industry trends.

89. **[FPL Only]**

Extreme Weather

90. Please identify and discuss steps, if any, that the Company has taken to ensure continued energy generation in case of a severe cold weather event.

RESPONSE:

Regulated & Renewable Energy (RRE) had weathered 2 recent polar vortexes (2014 & 2015) and a severe cold weather event in Jan 2018 and implemented weather hardening procedures and projects to ensure enhanced reliability through future cold weather events. For example, heat tracing and insulation of key equipment has provided dividends. Through each winter event, we gather lessons learned and disseminate throughout the fleet to mitigate future weather risks. In the fall of each year prior to cold weather each station executes a cold weather PM to ensure adequate protection of controlled devices. Since Florida is winter peaking, focusing on winter hardening provides the most benefit to our customers although we prepare our fleet for summer weather as well. During the recent Texas blackouts (Feb 2021), we understand that the deregulated energy providers had issues getting operators to plants. In times of system critical needs, we ensure adequate staffing of operating shifts and if needed, even have operators remain close to plants (and in some cases, sleep at plants) to minimize travel risk.

Each station has an extreme weather procedure and RRE has developed a fleet guidance document outlining general expectations and harnessing lessons learned from around the fleet.

For example, while not the same extreme temperature, Florida stations can benefit from freezing events at our Indiana or North Carolina stations.

- Cold weather guidance document - fleet wide Stations have hot weather preparedness procedure/checklists (Spring)
- Stations have cold weather preparedness procedure/checklist (Fall)
- Stations have standard Preventive Maintenance (PMs) associated with cold weather preparation entered into the Work Management System.
- Extreme weather Operations Protocol (Sterile control room, hands off, etc.)
- Preference to Spring / Fall outages to ensure reliability for peak Summer / Winter runs.
- Asset Inspection & Maintenance Programs (i.e., Reliability)
- Engineered Insulation upgrades and maintenance of our critical monitoring and control instrumentation.

91. Please identify any future winterization plans, if any, the Company intends to implement over the current planning period.

RESPONSE:

At this time, Regulated & Renewable Energy (RRE) has no specific winterization plans for the current planning period beyond what has been described in response to Q90. RRE has taken lessons learned from previous cold weather events and added protective systems to generation stations (e.g., heat tracing and insulation). During the coldest winter in recent Florida history (January 2010), Duke Energy Florida's Generation Fleet recorded its peak generation to our customers without issue. Since then, we have continued to review equipment performance and modify our systems as necessary to continue to reliably supply power when needed.

92. Please explain the Company's planning process for flood mitigation for current and proposed power plant sites and transmission/distribution substations.

RESPONSE:

Power Plants - Each of Duke Energy Florida's (DEF) existing generating facilities have a Natural Disaster Emergency Response Plan that details the actions the facility will execute in the event of a forecasted or impending natural disaster. This includes attempts to mitigate the impacts of coastal floods, flash floods and high-water events.

DEF's fossil engineering new power plant design criteria require all sites to have a grade level above the 100-year floodplain. In some cases, this addressed by raising the site elevation. DEF solar and storage sites are designed at a minimum to pass a 25 year / 24 hour storm event and are typically located outside of the 100-year floodplain.

Transmission/Distribution Substations - DEF's Substation Flood Mitigation program builds in protection for substations most vulnerable to flood damage using flood plain and storm surge data. It includes a systematic review and prioritization of substations at risk of flooding to determine the proper mitigation solution, which may include elevating or modifying equipment, or relocating substations altogether.

Flood mitigation is a targeted application of mitigation measures for the 230 kV, 115 kV, and 69kV to 12 kV substations. New assets could include control houses, relays, or total station rebuilds to increase elevation, etc.

93. Please address the following questions regarding the impact of all major storm events, such as Hurricane Ian, with associated flooding, destruction of utility facilities and customer buildings, and forced customer permanent migration.

a. Based on actual data, please briefly summarize the impact that major storms have had on your utility's customer number, retail sales and peak load.

b. Please explain whether the above discussed impact is include in your company's customer/retail energy sales/demand forecasts.

c. If your response to subpart (b) is affirmative, please explain how this impact is modeled.

RESPONSE:

a. Four major hurricanes have impacted the DEF service territory in the last decade, Irma (September 10-12, 2017), Michael (October 6-16, 2018), (September 28-30, 2022) and Idalia (August 26-31, 2023).

Hurricane Irma caused outages to over 1.3 million customers, and destroyed 1,800 distribution poles, 140 transmission poles and 1,100 transformers. Duke Energy restored power to more than 75 percent of its customers in just three days and 99 percent within eight days.

Hurricane Michael caused outages to approximately 72,000 customers. Additionally, Michael was the first hurricane to require the complete rebuild of three distribution feeders and 34 miles of transmission lines served by Duke Energy Florida.

Hurricane Ian resulted in 23,000 outages impacting 1,159,000 customers. There was damage to 601 distribution poles, 8 transmission poles and 642 transformers.

Hurricane Idalia resulted in nearly 6,000 outages impacting over 215,000 customers. Duke Energy replaced approximately 698 distribution poles, 28 transmission poles and 681 distribution transformers.

In the cases of Irma and Michael, DEF is unaware of any significant permanent relocation. There has been no long-range change in the number of customers or the customer growth in the areas of DEF territory affected by the storms. Hurricane Michael caused significant flood damage to some coastal communities, but these areas now report more customers than before the hurricane. In the case of hurricanes Ian and Idalia, it is too soon to address the potential for permanent relocation, but the areas of DEF territory affected by Ian were inland and subject to short term flooding and modest wind impacts that are very unlikely to cause long term changes to customer land use or behavior. Some coastal areas were affected by Idalia, but these were largely areas with lower population density and customer counts. It is unlikely that impacts from Idalia will cause long term changes in customer behavior.

b. No impacts are included in DEF's long term forecasts. There were some short-term impacts following Irma due to extended customer outages and the time required for repairs. These were contained to the months following the hurricane.

c. N/A.

94. Has the Company had to make any upgrades to any generating units or changes to operations practices as a result of any FERC Orders addressing extreme weather planning within the last two years? If so, please describe.

RESPONSE:

DEF is in compliance with all FERC requirements due to the preventative measures previously adopted. Please see response to Q90.

95. **[FEECA Utilities Only]** Please refer to the Excel Tables File (Data Centers). As of today, there are 125 or more data centers located in the state of Florida. For the purpose of better understanding this recent load growth, please complete Tables I and II.

RESPONSE:

Please see the table below and tab *Data Centers* of the Excel File *2024 TYSP - Data Request #1– Excel Tables*.xlsx.

Table I: Current Data Center Information										
Data Centers Currently Located in Utility Service Area										
						For each of the Data Center				
Total No. of Data Centers	Customer Class Served	Total Energy Usage in 2023	Impact to Summer Peak	Impact to Winter Peak Demand	Seasonality Observed, if any		Type of Data Center*	Energy Used in 2023	Hours of Peak Usage**	Impact to Peak Demand
		(MWHs)	(MWs)	(MWs)				(MWHs)		(MWs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
3	B2B	48,000	14.5	7	N/A	1	cloud	11,000	10 18	2.5
						2	colocation	29,000	10 18	3.6
						3	colocation	8,000	1	1
						...				
* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.										
** Based on military time 1 - 24.										

Table II: Planned Data Center Information						
Planned Data Centers in Your Service Area						
	Type of Data Center*	Customer Class Served	Expected In-Service Data	Expected Annual Energy Usage	Expected Impact to Summer Peak	Expected Impact to Winter Peak Demand
				(MWHs)	(MWs)	(MWs)
	(1)	(2)	(3)	(4)	(5)	(6)
1	Hybrid Cloud Solutions (Colocation & Cloud)	B2B	2Q 2024	8	5	4
2						
3						
...						
* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.						

DEF has identified three customers currently operating data centers in our service area. These valued customers do not collectively represent enough load or demand to be separately tracked in the load forecast.

96. **[FEECA Utilities Only]** With respect to the load forecast included in the Utility's 2024 Ten-Year Site Plan to be filed in April of this year, does the load forecast include projections of annual energy consumption and demand associated with data centers within your service area during the forecasting time horizon (2024-2033)?

    a. If any such projections have been made, please provide details of the projections including the type of data centers expected to contribute to such energy/demand, and what factors are driving such energy consumption and demand.

    b. If no specific projections have been made, what does the Utility believe is the likely pattern of load growth associated with this industry within its service territory?

    RESPONSE:

    The three existing data centers have not represented sufficient growth to warrant dedicated forecasting for load center growth. The energy and demand needs of these and potential similar customers are included in the overall forecast of non-phosphate industrial customers.

    a. N/A

    b. DEF tracks data center growth in two broad categories, small-medium sized data centers and large-mega projects. Energy and demand growth for small-medium sized centers are included as part of the overall forecast of industrial customer growth. Potential large and mega-projects are forecast on an individual basis. While DEF economic development has continuing discussions with potential customers in this category, none of these has matured to sufficient certainty to warrant inclusion in the forecast. DEF Integrated Resource Planning meets regularly with the economic development team to discuss potential developments and opportunities in this area.

97. **[FEECA Utilities Only]** Please identify the Utility's issues and/or concerns, if any, that are expected to result from the growth in data centers in the Utility's service territory.

    a. Please specify how the Utility anticipates responding to such issues or concerns.

    b. Please specify how the Utility responded to such issues or concerns in the past.

    RESPONSE:

    a. DEF engages with potential developers of large data centers as the company does with all potential large customers. DEF works with customers to understand and anticipate those customers needs for generation and grid service. In doing so, DEF also evaluates the potential impact on the system and on the general body of customers. DEF's economic development and large account management teams meet regularly with integrated resource (generation) planning and transmission planning to evaluate and prepare for the needs and impacts resulting from existing and new customer expansions.

b. N/A

98. **[Non-FEECA Utilities Only]**

99. **[Non-FEECA Utilities Only]**

100. **[Non-FEECA Utilities Only]**

Sheet #	DR No.	Tab Name
1	-	Table of Contents
2	3	Financial Assumptions
3	3	Financial Escalation
4	4	Hourly System Load
5	5	Historic Peak Demand
6	20	Electric Vehicle Charging
7	27	DR Participation
8	28	DR Annual Use
9	29	DR Peak Activation
10	30	LOLP
11	31	Unit Performance
12	32	Utility Exisiting Traditional
13	33	Utility Planned Traditional
14	34	Utility Existing Renewable
15	35	Utility Planned Renewable
16	45	Firm Purchases
17	46	PPA Existing Traditional
18	47	PPA Planned Traditional
19	48	PPA Existing Renewable
20	49	PPA Planned Renewable
21	51	PSA Existing
22	52	PSA Planned
23	54	Annual Renewable Generation
25	63	Existing Energy Storage
26	64	Planned Energy Storage
27	37	As-available Energy Rate
28	38	Planned PPSA Units
29	40	Capacity Factors
30	42	Steam Unit CC Conversion
31	43	Steam Unit Fuel Switching
32	44	Transmission Lines
33	70	Emissions Cost
34	72	EPA Operational Effects
35	73	EPA Cost Effects
36	74	EPA Unit Availability
37	76	Fuel Usage & Price
38	95	Data Centers

TYSP Year	2024
Staff's Data Request #	1
Question No.	3

Financial Assumptions Base Case		
AFUDC RATE		8.17%
CAPITALIZATION RATIOS:		
	DEBT	47%
	PREFERRED	
	EQUITY	53%
RATE OF RETURN		
	DEBT	6.0%
	PREFERRED	
	EQUITY	10%
INCOME TAX RATE:		
	STATE	5.50%
	FEDERAL	21%
	EFFECTIVE	25.35%
OTHER TAX RATE:		
DISCOUNT RATE:		7.45%
TAX DEPRECIATION RATE:		

(1)

for CT:	15 Years (MACRS Table)
for CC:	20 Years (MACRS Table)
for Solar and SPS:	5 Years (MACRS Table)
for Battery:	5 Years (MACRS Table)

TYSP Year	2024
Staff's Data Request #	1
Question No.	3

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost [1] %	Fixed O&M Cost %	Variable O&M Cost %
2024	2.50%		2.5%	2.5%
2025	2.50%		2.5%	2.5%
2026	2.50%		2.5%	2.5%
2027	2.50%		2.5%	2.5%
2028	2.50%		2.5%	2.5%
2029	2.50%		2.5%	2.5%
2030	2.50%		2.5%	2.5%
2031	2.50%		2.5%	2.5%
2032	2.50%		2.5%	2.5%
2033	2.50%		2.5%	2.5%

[1] Long Term Escalation Rates

Combustion Turbine	1.49%
Combined Cycle	1.61%
Solar	1.04%
Solar Plus Storage	0.95%
Battery	0.50%

TYSP Year 2024
Staff's Data Request # 1
Question No. 4

Date	Hourly System Load (MW)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/1/2023	3,408	3,223	3,013	2,872	2,779	2,790	2,892	3,020	3,283	3,637	3,897	4,082	4,288	4,512	4,623	4,633	4,695	4,758	4,845	4,644	4,309	4,030	3,699	3,395
1/2/2023	3,115	2,876	2,722	2,702	2,707	2,824	3,020	3,250	3,498	3,760	3,985	4,193	4,409	4,643	4,857	5,129	5,239	5,301	5,385	5,208	4,894	4,508	4,124	3,560
1/3/2023	3,191	2,928	2,790	2,727	2,757	2,937	3,326	3,601	3,753	3,946	4,225	4,771	4,828	4,965	5,144	5,331	5,419	5,431	5,502	5,324	5,132	4,792	4,330	3,951
1/4/2023	3,495	3,185	3,001	2,960	3,011	3,233	3,685	4,029	4,280	4,464	4,670	4,847	4,998	5,221	5,381	5,446	5,493	5,588	5,722	5,506	5,227	4,883	4,441	3,973
1/5/2023	3,445	3,214	3,083	2,998	3,024	3,285	3,786	4,016	4,258	4,440	4,654	4,708	4,736	4,564	4,495	4,424	4,405	4,537	4,818	4,654	4,525	4,234	3,911	3,522
1/6/2023	3,171	2,953	2,905	2,821	2,989	3,250	3,808	4,263	4,373	4,235	4,080	3,997	4,028	3,954	3,861	4,032	4,255	4,413	4,611	4,587	4,524	4,380	4,112	3,924
1/7/2023	3,775	3,659	3,592	3,642	3,728	3,953	4,289	4,804	5,027	4,793	4,437	4,168	3,885	3,755	3,758	3,822	3,939	4,135	4,401	4,376	4,285	4,050	3,841	3,627
1/8/2023	3,573	3,426	3,450	3,507	3,627	3,756	3,943	4,262	4,474	4,368	4,173	3,905	3,857	3,837	3,908	4,015	4,175	4,386	4,675	4,608	4,340	3,945	3,567	3,182
1/9/2023	2,897	2,749	2,735	2,750	2,878	3,198	3,865	4,251	4,304	4,074	3,969	3,896	3,947	4,015	4,105	4,263	4,425	4,674	4,896	4,783	4,514	4,096	3,697	3,258
1/10/2023	3,016	2,907	2,866	2,890	2,997	3,458	4,109	4,498	4,548	4,368	4,141	3,941	3,847	3,857	3,822	3,962	4,104	4,350	4,731	4,747	4,624	4,374	4,012	3,634
1/11/2023	3,453	3,351	3,340	3,515	3,777	4,203	4,892	5,364	5,252	4,853	4,415	3,991	3,845	3,793	3,817	3,909	4,117	4,267	4,508	4,495	4,319	4,151	3,810	3,530
1/12/2023	3,334	3,153	3,129	3,181	3,317	3,691	4,268	4,683	4,581	4,245	3,981	3,834	3,800	3,791	3,879	4,010	4,194	4,361	4,560	4,491	4,300	4,020	3,682	3,299
1/13/2023	3,040	2,900	2,835	2,814	2,880	3,121	3,554	3,958	4,091	4,218	4,185	4,100	4,095	4,085	4,013	4,045	4,227	4,536	4,916	4,907	4,811	4,653	4,497	4,246
1/14/2023	4,108	4,066	4,114	4,265	4,401	4,793	5,215	5,771	6,068	6,043	5,825	5,476	5,034	4,665	4,504	4,456	4,682	5,207	5,815	6,013	6,045	5,948	5,765	5,509
1/15/2023	5,336	5,353	5,464	5,609	5,865	6,222	6,620	7,135	7,237	6,797	6,144	5,388	4,876	4,539	4,295	4,251	4,355	4,711	5,308	5,588	5,748	5,628	5,471	5,337
1/16/2023	5,395	5,478	5,642	5,951	6,283	6,788	7,216	7,840	7,408	6,688	5,893	5,285	4,769	4,381	4,184	4,143	4,305	4,700	5,165	5,413	5,340	5,238	4,993	4,736
1/17/2023	4,736	4,721	4,842	5,009	5,262	5,881	6,704	7,100	6,810	5,956	5,164	4,570	4,196	3,985	3,931	4,024	4,205	4,430	4,806	4,771	4,617	4,367	3,920	3,501
1/18/2023	3,292	3,221	3,201	3,254	3,404	3,861	4,569	4,970	4,851	4,437	4,097	3,855	3,811	3,841	3,889	4,020	4,169	4,398	4,725	4,683	4,475	4,143	3,661	3,307
1/19/2023	3,071	2,938	2,837	2,842	2,940	3,233	3,814	4,220	4,240	4,048	3,956	3,976	4,113	4,287	4,425	4,593	4,707	4,897	5,000	4,928	4,670	4,358	3,860	3,460
1/20/2023	3,175	2,960	2,832	2,764	2,814	3,040	3,495	3,857	4,097	4,140	4,094	4,172	4,364	4,546	4,668	4,784	4,783	4,863	4,916	4,696	4,455	4,075	3,760	3,330
1/21/2023	3,064	2,893	2,768	2,722	2,745	2,832	2,986	3,337	3,747	4,145	4,314	4,330	4,325	4,342	4,273	4,349	4,428	4,514	4,638	4,492	4,321	3,976	3,746	3,385
1/22/2023	3,142	2,988	2,881	2,830	2,861	2,906	3,047	3,294	3,665	3,948	4,056	4,164	4,368	4,552	4,489	4,644	4,844	4,952	5,112	5,059	4,807	4,394	3,963	3,429
1/23/2023	3,102	2,847	2,710	2,657	2,715	2,992	3,505	3,871	4,042	4,146	4,091	4,033	3,999	3,932	3,794	3,916	4,117	4,410	4,765	4,819	4,646	4,394	4,072	3,715
1/24/2023	3,502	3,404	3,452	3,382	3,578	4,095	4,750	5,171	5,121	4,794	4,468	4,250	4,029	3,863	3,865	3,977	4,171	4,533	4,803	4,766	4,580	4,286	3,813	3,444
1/25/2023	3,065	2,856	2,771	2,737	2,845	3,119	3,596	3,940	3,995	4,043	4,276	4,359	4,470	4,532	4,722	4,959	5,154	5,288	5,383	5,325	5,008	4,676	4,085	3,556
1/26/2023	3,238	3,022	2,850	2,763	2,785	3,039	3,554	4,044	4,034	4,072	3,991	3,898	3,818	3,837	3,875	3,999	4,239	4,484	4,824	4,913	4,841	4,487	4,154	3,793
1/27/2023	3,590	3,515	3,498	3,585	3,796	4,346	5,129	5,597	5,593	5,257	4,839	4,466	4,160	3,917	3,824	3,876	4,074	4,314	4,673	4,723	4,705	4,613	4,657	4,458
1/28/2023	4,340	4,277	4,262	4,266	4,390	4,760	5,063	5,390	5,640	5,518	5,158	4,725	4,392	4,330	4,301	4,287	4,273	4,381	4,565	4,457	4,309	4,100	3,802	3,550
1/29/2023	3,226	2,995	2,936	2,876	2,902	2,999	3,117	3,453	3,859	3,987	4,027	4,041	4,167	4,385	4,553	4,790	4,944	4,993	5,092	4,997	4,696	4,270	3,813	3,341
1/30/2023	2,999	2,811	2,730	2,657	2,756	3,001	3,458	3,834	4,011	4,155	4,357	4,562	4,859	5,071	5,343	5,516	5,685	5,693	5,714	5,525	5,208	4,820	4,180	3,660
1/31/2023	3,281	3,071	2,921	2,822	2,804	3,007	3,435	3,747	3,869	4,018	4,264	4,548	4,916	5,117	5,304	5,500	5,644	5,670	5,631	5,438	5,115	4,683	4,036	3,509
2/1/2023	3,164	2,970	2,817	2,797	2,839	3,033	3,428	3,799	3,851	3,946	4,188	4,393	4,794	5,097	5,351	5,455	5,566	5,548	5,583	5,428	5,099	4,681	4,058	3,542
2/2/2023	3,200	2,958	2,791	2,753	2,792	3,014	3,435	3,791	3,865	3,970	4,113	4,404	4,745	4,994	5,269	5,537	5,690	5,693	5,714	5,476	5,186	4,768	4,148	3,646
2/3/2023	3,307	3,090	2,963	2,912	2,986	3,158	3,646	4,087	4,410	4,791	5,000	4,914	4,681	4,389	4,156	4,083	4,153	4,368	4,616	4,569	4,376	4,161	3,931	3,629
2/4/2023	3,367	3,270	3,219	3,279	3,287	3,455	3,913	4,469	4,647	4,533	4,312	3,979	3,875	3,724	3,695	3,742	3,898	4,106	4,394	4,411	4,233	3,978	3,680	3,372
2/5/2023	3,134	2,970	2,875	2,863	2,919	3,002	3,161	3,542	3,974	4,130	4,140	4,040	4,013	4,046	4,204	4,308	4,436	4,585	4,764	4,715	4,475	4,093	3,708	3,235
2/6/2023	3,004	2,821	2,737	2,737	2,811	3,117	3,685	4,231	4,243	4,099	3,946	3,837	3,943	4,041	4,170	4,343	4,638	4,829	5,011	4,953	4,656	4,224	3,703	3,239
2/7/2023	3,012	2,832	2,801	2,809	2,920	3,361	4,020	4,457	4,347	4,150	3,986	3,782	3,841	3,941	4,128	4,393	4,737	4,855	4,996	4,932	4,679	4,298	3,803	3,281
2/8/2023	2,984	2,795	2,748	2,767	2,831	3,113	3,728	4,117	4,116	4,054	4,071	4,054	4,226	4,398	4,511	4,841	5,120	5,152	5,135	5,059	4,777	4,345	3,918	3,401
2/9/2023	3,030	2,825	2,670	2,661	2,734	2,980	3,530	3,837	3,901	3,941	4,038	4,237	4,502	4,699	5,122	5,287	5,387	5,436	5,467	5,356	5,096	4,620	4,193	3,717
2/10/2023	3,370	3,088	2,980	2,855	2,879	3,064	3,471	3,820	4,045	4,363	4,720	4,965	5,194	5,304	5,558	5,699	5,780	5,627	5,456	5,257	4,816	4,524	4,143	3,782
2/11/2023	3,475	3,203	3,022	2,921	2,890	2,924	3,115	3,336	3,723	4,212	4,629	4,935	5,102	5,248	5,273	5,289	5,282	5,295	5,317	5,212	4,935	4,598	4,157	3,783
2/12/2023	3,422	3,110	2,912	2,800	2,772	2,816	2,959	3,183	3,577	3,997	4,208	4,209	4,180	4,131	4,040	4,081	4,232	4,299	4,554	4,467	4,254	4,023	3,691	3,403
2/13/2023	3,113	2,973	2,938	3,023	3,179	3,543	4,294	4,747	4,693	4,359	4,030	3,837	3,763	3,669	3,701	3,804	3,978	4,269	4,623	4,704	4,594	4,356	3,926	3,528
2/14/2023	3,324	3,246	3,223	3,390	3,506	4,059	4,926	5,260	5,035	4,500	4,026	3,824	3,720	3,700	3,759	3,910	4,162	4,517	4,760	4,714	4,474	4,108	3,701	3,306
2/15/2023	3,066	2,919	2,851	2,842	2,924	3,302	3,908	4,265	4,208	4,038	3,918	4,004	4,118	4,228	4,413	4,724	5,074	5,211	5,237	5,231	4,905	4,449	3,910	3,433
2/16/2023	3,113	2,911	2,817	2,755	2,807	3,036	3,454	3,755	3,884	3,952	4,073	4,249	4,492	4,688	4,947	5,159	5,356	5,358	5,312	5,215	4,911	4,531	4,093	3,626
2/17/2023	3,260	3,058	2,947	2,907	2,917	3,123	3,511	3,785	4,027	4,238	4,504	4,732	5,077	5,444	5,684	5,854	5,897	5,756	5,643	5,359	5,040	4,673	4,252	3,822
2/18/2023	3,399	3,039	2,930	2,804	2,767	2,880	3,073	3,471	3,828	3,981	3,914	3,804	3,725	3,686	3,706	3,837	3,979	4,095	4,215	4,221	4,079	3,860	3,609	3,305
2/19/2023	3,072	2,888	2,778	2,756	2,797	2,888	3,141	3,520	3,762	3,798	3,774	3,943	4,139	4,308	4,490	4,757	4,867	4,955	4,980	4,947	4,600	4,213	3,802	3,344
2/20/2023	3,065	2,825	2,735	2,738	2,731	2,919	3,276	3,601	3,835	3,882	3,994	4,126	4,283	4,504	4,728	5,034	5,303	5,366	5,406	5,300	4,973	4,512	3,963	3,521
2/21/2023	3,154	2,951	2,825	2,788	2,825	3,053	3,396	3,769	3,969	4,049	4,187	4,483	4,858	5,058	5,427	5,671	5,795	5,761	5,692	5,569	5,222	4,840	4,315	3,606
2/22/2023	3,306	2,994	2,849	2,772	2,865	3,074	3,584	3,989	4,133	4,262	4,428	4,741	5,099	5,309	5,719	6,119	6,309	6,319	6,123	5,878	5,519	5,106	4,571	3,940
2/23/2023	3,501	3,188	3,044	2,957	3,008	3,254	3,685	3,989	4,347	4,624	4,897	5,285	5,677	6,051	6,284	6,484	6,657	6,534	6,272	6,043	5,711	5,267	4,736	4,048

2/24/2023	3,657	3,313	3,103	3,015	3,018	3,238	3,634	4,004	4,168	4,429	4,618	5,060	5,544	5,925	6,247	6,524	6,518	6,328	6,014	5,712	5,431	5,033	4,633	4,198
2/25/2023	3,840	3,551	3,283	3,094	3,019	3,086	3,310	3,447	3,909	4,369	4,736	5,137	5,501	5,743	6,020	6,216	6,316	6,231	5,953	5,663	5,145	4,794	4,331	3,916
2/26/2023	3,397	3,121	2,952	2,843	2,763	2,776	2,882	3,133	3,501	3,825	4,125	4,401	4,922	5,283	5,582	5,812	5,969	5,945	5,680	5,552	5,140	4,715	4,069	3,497
2/27/2023	3,126	2,881	2,775	2,689	2,749	2,959	3,396	3,679	3,840	3,941	4,081	4,293	4,557	4,869	5,221	5,511	5,753	5,815	5,681	5,618	5,298	4,884	4,336	3,843
2/28/2023	3,346	3,142	3,023	2,961	2,993	3,230	3,663	3,984	4,300	4,496	4,726	4,987	5,255	5,468	5,709	5,999	6,130	6,094	5,910	5,819	5,486	5,036	4,436	3,977
Leave Row Blank																								
3/1/2023	3,381	3,149	2,976	2,908	2,952	3,115	3,597	3,856	4,079	4,358	4,629	4,931	5,298	5,637	6,002	6,294	6,499	6,473	6,198	5,921	5,534	5,037	4,391	3,720
3/2/2023	3,317	3,067	2,920	2,843	2,844	3,047	3,457	3,808	4,001	4,185	4,462	4,757	5,119	5,511	5,855	6,142	6,319	6,278	6,132	5,933	5,508	5,080	4,551	3,929
3/3/2023	3,499	3,189	3,019	2,958	2,960	3,193	3,593	3,951	4,208	4,567	4,964	5,267	5,591	5,880	6,138	6,362	6,410	6,265	6,006	5,854	5,525	5,174	4,806	4,341
3/4/2023	3,924	3,521	3,313	3,240	3,194	3,219	3,382	3,662	4,129	4,745	5,308	5,624	5,950	6,213	6,415	6,526	6,482	6,350	6,069	5,876	5,560	5,192	4,764	4,357
3/5/2023	3,885	3,564	3,367	3,289	3,245	3,212	3,281	3,505	3,968	4,486	5,167	5,664	6,071	6,429	6,684	6,962	6,988	6,742	6,626	6,218	5,830	5,376	4,779	4,049
3/6/2023	3,674	3,368	3,223	3,141	3,144	3,341	3,708	4,009	4,413	4,783	5,137	5,620	6,081	6,406	6,681	6,883	6,956	6,757	6,564	6,320	5,929	5,465	4,845	4,294
3/7/2023	3,742	3,338	3,180	3,089	3,031	3,190	3,699	3,939	4,274	4,558	4,901	5,217	5,678	6,010	6,491	6,599	6,715	6,668	6,496	6,204	5,806	5,311	4,827	4,271
3/8/2023	3,869	3,543	3,252	3,196	3,225	3,421	3,953	4,178	4,459	4,713	5,010	5,321	5,638	5,940	6,156	6,224	6,212	6,057	5,870	5,670	5,366	4,954	4,401	3,767
3/9/2023	3,359	3,043	2,888	2,821	2,834	3,006	3,461	3,767	4,007	4,110	4,266	4,405	4,743	5,016	5,258	5,508	5,701	5,675	5,538	5,426	5,102	4,702	4,282	3,806
3/10/2023	3,416	3,089	2,870	2,760	2,829	3,074	3,533	3,851	4,045	4,200	4,424	4,678	5,001	5,316	5,655	5,886	5,934	5,825	5,587	5,433	5,151	4,894	4,489	4,084
3/11/2023	3,567	3,305	3,121	3,041	3,032	3,085	3,203	3,466	3,931	4,185	4,393	4,615	4,793	4,914	5,156	5,332	5,467	5,392	5,150	4,966	4,681	4,265	3,887	3,451
3/12/2023	3,090	2,846	0	2,718	2,660	2,725	2,790	3,022	3,310	3,527	3,735	4,034	4,276	4,492	4,872	5,262	5,616	5,806	5,773	5,642	5,515	5,208	4,801	4,300
3/13/2023	3,789	3,411	3,243	3,176	3,236	3,440	3,814	4,124	4,383	4,640	4,964	5,276	5,383	5,427	5,392	5,393	5,542	5,619	5,495	5,386	5,288	4,951	4,554	3,942
3/14/2023	3,425	3,144	2,981	2,850	2,825	3,061	3,260	3,715	3,854	3,898	3,771	3,724	3,805	3,826	3,865	4,109	4,392	4,620	4,660	4,637	4,700	4,424	3,985	3,433
3/15/2023	3,167	2,961	2,944	2,802	2,810	3,014	3,523	3,923	4,194	4,418	4,584	4,531	4,237	3,846	3,584	3,570	3,703	3,973	4,138	4,356	4,449	4,273	3,965	3,642
3/16/2023	3,377	3,180	3,113	3,146	3,264	3,543	3,926	4,328	4,537	4,230	3,978	3,647	3,578	3,605	3,657	3,848	4,128	4,538	4,667	4,647	4,634	4,366	3,910	3,397
3/17/2023	3,038	2,831	2,736	2,677	2,773	2,983	3,294	3,752	3,928	3,973	3,951	3,956	4,179	4,333	4,517	4,770	5,063	5,358	5,318	5,186	5,052	4,775	4,451	3,944
3/18/2023	3,469	3,178	2,997	2,907	2,885	2,926	3,027	3,280	3,609	3,933	4,300	4,617	4,855	5,045	5,093	5,264	5,361	5,267	5,062	4,927	4,821	4,514	4,162	3,794
3/19/2023	3,276	2,977	2,831	2,700	2,669	2,796	3,059	3,410	3,789	4,099	4,255	4,316	4,180	3,900	3,782	3,706	3,751	3,963	4,124	4,327	4,459	4,238	3,914	3,390
3/20/2023	3,054	2,913	2,868	2,975	3,107	3,534	4,113	4,714	4,821	4,699	4,412	4,255	4,038	3,961	3,777	3,736	3,925	4,161	4,384	4,609	4,785	4,452	4,079	3,636
3/21/2023	3,381	3,285	3,277	3,363	3,568	4,018	4,647	5,144	5,082	4,624	4,167	3,858	3,819	3,803	3,831	3,958	4,209	4,397	4,521	4,548	4,620	4,325	3,887	3,371
3/22/2023	3,139	2,899	2,750	2,712	2,782	3,037	3,467	3,794	3,857	3,862	3,867	3,943	4,123	4,336	4,550	4,841	5,211	5,466	5,436	5,227	5,152	4,738	4,201	3,653
3/23/2023	3,229	3,020	2,837	2,752	2,792	3,004	3,406	3,720	3,750	3,873	4,123	4,231	4,435	4,702	5,089	5,583	6,016	6,222	6,198	5,887	5,681	5,250	4,716	4,114
3/24/2023	3,444	3,138	2,864	2,776	2,796	3,011	3,382	3,663	3,839	3,964	4,140	4,332	4,723	5,100	5,583	5,995	6,345	6,493	6,376	6,031	5,689	5,241	4,660	4,161
3/25/2023	3,700	3,408	3,170	3,039	2,983	3,063	3,244	3,560	3,875	4,244	4,536	4,841	5,389	5,839	6,263	6,620	6,968	7,086	6,878	6,456	6,029	5,840	5,370	4,658
3/26/2023	4,180	3,841	3,564	3,347	3,276	3,250	3,323	3,544	3,854	4,310	4,938	5,415	5,856	6,314	6,654	6,876	7,146	7,374	7,237	6,859	6,674	6,061	5,324	4,597
3/27/2023	4,126	3,804	3,553	3,430	3,400	3,572	3,924	4,230	4,415	4,662	4,983	5,343	5,773	6,234	6,640	7,184	7,575	7,608	7,365	7,137	7,039	6,287	5,585	4,813
3/28/2023	4,201	3,752	3,459	3,265	3,236	3,415	3,778	4,090	4,400	4,590	4,815	5,159	5,672	6,210	6,596	6,986	7,276	7,277	6,992	6,623	6,397	5,920	5,371	4,754
3/29/2023	4,212	3,811	3,619	3,408	3,378	3,623	4,034	4,327	4,434	4,574	4,709	4,816	5,084	5,373	5,611	5,877	5,972	5,977	5,743	5,537	5,403	5,027	4,489	3,959
3/30/2023	3,474	3,132	2,935	2,903	2,895	3,096	3,515	3,902	4,009	4,085	4,181	4,346	4,484	4,770	5,129	5,672	6,083	6,258	6,029	5,817	5,699	5,224	4,704	4,051
3/31/2023	3,449	3,165	2,983	2,883	2,901	3,069	3,438	3,752	3,931	4,093	4,320	4,503	4,795	5,272	5,659	5,840	6,128	6,290	6,147	5,798	5,613	5,169	4,740	4,185
4/1/2023	3,775	3,457	3,240	3,061	3,040	3,085	3,149	3,424	3,750	4,186	4,584	5,154	5,630	5,930	6,065	6,377	6,601	6,643	6,491	6,618	6,132	5,704	5,214	4,578
4/2/2023	4,137	3,807	3,554	3,420	3,371	3,426	3,522	3,726	4,039	4,471	4,839	5,261	5,621	5,980	6,348	6,641	7,058	7,070	7,143	6,818	6,323	5,783	5,105	4,432
4/3/2023	3,895	3,545	3,340	3,238	3,210	3,436	3,781	4,128	4,248	4,503	4,767	5,227	5,676	6,087	6,422	6,747	7,054	7,213	7,108	6,764	6,479	5,960	5,348	4,646
4/4/2023	4,261	3,744	3,430	3,284	3,247	3,353	3,706	4,073	4,363	4,623	5,060	5,546	5,871	6,411	6,793	7,345	7,576	7,774	7,571	7,180	6,926	6,433	5,842	5,148
4/5/2023	4,345	4,003	3,736	3,577	3,572	3,742	4,130	4,295	4,520	5,072	5,491	5,924	6,162	6,677	7,184	7,355	7,443	7,531	7,302	6,826	6,544	6,100	5,495	4,860
4/6/2023	4,391	3,895	3,650	3,470	3,473	3,630	3,996	4,242	4,458	4,716	5,255	5,680	6,190	6,637	7,042	7,340	7,609	7,586	7,435	6,987	6,749	6,250	5,688	5,005
4/7/2023	4,493	4,129	3,730	3,497	3,475	3,567	3,878	4,172	4,522	4,963	5,407	5,776	6,247	6,669	7,081	7,575	7,845	7,801	7,476	6,815	6,573	6,091	5,579	5,019
4/8/2023	4,474	4,027	3,724	3,540	3,460	3,415	3,501	3,869	4,300	4,738	5,201	5,557	5,999	6,372	6,644	6,889	7,093	7,053	6,865	6,571	6,385	6,050	5,630	5,116
4/9/2023	4,651	4,086	3,829	3,661	3,555	3,562	3,756	3,947	4,187	4,576	4,780	4,831	4,864	4,817	4,795	4,926	5,026	4,934	4,783	4,670	4,752	4,666	4,254	3,660
4/10/2023	3,270	3,035	2,910	2,844	2,897	3,123	3,634	4,054	4,202	4,365	4,590	4,759	4,941	5,078	5,161	5,286	5,340	5,338	5,299	5,163	5,119	4,888	4,410	3,759
4/11/2023	3,424	3,026	2,902	2,836	2,863	3,137	3,660	3,923	4,012	4,020	4,155	4,351	4,560	4,713	4,878	5,076	5,236	5,356	5,267	5,216	5,207	4,926	4,399	3,865
4/12/2023	3,410	3,096	2,959	2,909	2,932	3,231	3,739	4,061	4,076	4,230	4,343	4,405	4,561	4,595	4,728	4,818	4,904	4,999	4,964	5,013	5,055	4,837	4,464	3,907
4/13/2023	3,600	3,313	3,148	3,067	3,124	3,372	3,902	4,233	4,302	4,630	4,827	5,209	5,719	6,117	6,406	6,560	6,559	6,946	6,685	6,501	6,223	5,812	5,266	4,632
4/14/2023	4,139	3,843	3,583	3,318	3,316	3,564	3,973	4,300	4,581	4,775	5,083	5,468	6,218	6,562	6,853	7,017	7,124	7,303	7,072	6,701	6,394	5,889	5,318	4,669
4/15/2023	4,141	3,694	3,464	3,250	3,148	3,196	3,343	3,607	3,936	4,417	5,009	5,668	6,139	6,599	6,983	7,321	7,555	7,588	7,196	6,703	6,457	5,901	5,333	4,685
4/16/2023	4,490	4,027	3,732	3,458	3,334	3,293	3,379	3,548	3,980	4,574	5,106	5,603	6,142	6,635	6,958	6,892	7,023	7,201	6,924	6,659	6,166	5,811	5,173	4,576
4/17/2023	3,998	3,597	3,400	3,275	3,316	3,494	3,831	4,221	4,477	4,581	4,625	4,661	4,654	4,656	4,668	4,733	4,990	5,221	5,329	5,080	4,991	4,621	4,059	3,547
4/18/2023	3,206	2,915	2,755	2,651	2,695	2,922	3,298	3,579	3,632	3,610	3,637	3,695	3,824	4,041	4,300	4,700	5,103	5,484	5,644	5,368	5,091	4,695	4,162	3,595
4/19/2023	3,160	2,908	2,766	2,725	2,807	3,022	3,368	3,676	3,760	3,842	3,954	4,130	4,287	4,552	4,930	5,338	5,855	6,040	5,954	5,683	5,465	5,027	4,503	3,880
4/20/2023	3,459	3,164	2,916	2,792	2,799	2,987	3,327	3,603	3,755	3,955	4,176	4,418	4,732	5,061	5,490	5,768	6,247	6,438	6,312	5,923	5,664	5,292	4,679	4,029
4/21/2023	3,618	3,292	3,063	2,957	2,940	3,105	3,443	3,785	3,958	4,202	4,532	4,911	5,265	5,725	6,157	6,475	6,655	6,806	6,644	6,145	5,888	5,577	4,940	4,370
4/22/2023	3,997	3,672	3,455	3,309	3,246	3,234	3,294	3,464	3,861	4,296	4,788	5,239	5,717	6,070	6,330	6,662	6,849	6,775	6,622	6,178	5,948	5,526	5,037	4,511
4/23/2023	4,078	3,744	3,505	3,319	3,223	3,170	3,186	3,293	3,567	3,919	4,269	4,610	5,012	5,485	5,870	6,230	6,620	6,857	6,723	6,168	6,055	5,612	4,901	4,266
4/24/2023	3,824	3,499	3,286	3,157	3,173	3,359	3,707	3,989	4,189	4,367	4,659	4,871	5,231	5,494	5,630	5,655	5,455	5,294	5,181	5,053	4,992	4,721	4,270	3,797

4/25/2023	3,423	3,159	2,987	2,926	2,945	3,144	3,521	3,793	3,964	4,124	4,409	4,795	5,162	5,537	5,842	6,233	6,464	6,252	6,045	5,770	5,518	5,145	4,642	4,051
4/26/2023	3,677	3,341	3,171	3,066	3,074	3,272	3,630	3,842	4,076	4,302	4,663	5,055	5,518	5,993	6,378	6,693	6,969	6,905	6,722	6,393	6,120	5,580	4,964	4,395
4/27/2023	3,931	3,589	3,362	3,266	3,232	3,413	3,789	4,074	4,238	4,490	4,863	5,257	5,830	6,347	6,807	7,012	7,146	6,885	6,493	6,273	6,033	5,517	4,775	4,115
4/28/2023	3,646	3,323	3,144	3,039	3,061	3,278	3,676	3,946	4,178	4,361	4,649	4,910	5,178	5,552	6,095	6,537	6,541	6,372	6,183	5,937	5,667	5,307	4,864	4,422
4/29/2023	4,069	3,801	3,590	3,439	3,374	3,393	3,454	3,631	4,064	4,528	4,954	5,372	5,685	5,977	5,964	5,949	5,882	5,598	5,264	5,099	5,044	4,827	4,499	4,157
4/30/2023	3,828	3,567	3,416	3,330	3,310	3,358	3,388	3,548	3,788	4,088	4,325	4,488	4,690	4,832	4,911	5,026	5,225	5,341	5,324	5,121	5,063	4,751	4,270	3,728
5/1/2023	3,404	3,128	2,916	2,873	2,902	3,094	3,435	3,637	3,842	4,024	4,245	4,479	4,762	5,056	5,359	5,664	5,952	6,249	6,161	5,798	5,513	5,169	4,623	4,074
5/2/2023	3,623	3,305	3,125	3,024	3,073	3,254	3,604	3,836	4,034	4,280	4,507	4,820	5,142	5,491	5,822	6,146	6,500	6,638	6,549	6,107	5,859	5,425	4,779	4,235
5/3/2023	3,801	3,537	3,317	3,208	3,186	3,314	3,627	3,840	4,032	4,210	4,326	4,462	4,677	4,910	5,223	5,575	5,931	6,110	5,970	5,484	5,310	4,947	4,436	3,837
5/4/2023	3,403	3,111	2,885	2,769	2,796	2,993	3,363	3,567	3,734	3,862	4,095	4,350	4,695	5,074	5,452	5,915	6,358	6,558	6,418	6,009	5,697	5,267	4,638	4,070
5/5/2023	3,612	3,266	3,039	2,935	2,961	3,139	3,462	3,675	3,876	4,153	4,427	4,752	5,230	5,623	6,019	6,418	6,461	6,265	5,883	5,517	5,308	5,044	4,560	4,163
5/6/2023	3,814	3,530	3,339	3,147	3,108	3,150	3,245	3,477	3,912	4,350	4,755	5,163	5,540	5,770	5,987	6,161	6,242	6,205	5,981	5,677	5,513	5,189	4,784	4,298
5/7/2023	3,847	3,503	3,291	3,138	3,074	3,029	3,082	3,258	3,672	4,123	4,506	4,824	5,184	5,523	5,892	6,186	6,385	6,531	6,430	6,113	5,891	5,404	4,762	4,174
5/8/2023	3,666	3,297	3,068	2,955	2,925	3,086	3,399	3,722	3,943	4,162	4,460	4,843	5,239	5,756	6,287	6,670	7,085	7,353	7,256	6,788	6,357	5,803	5,027	4,364
5/9/2023	3,904	3,546	3,311	3,160	3,171	3,298	3,601	3,865	4,115	4,421	4,841	5,273	5,896	6,403	6,793	7,091	7,243	7,281	7,353	7,165	6,814	6,259	5,524	4,738
5/10/2023	4,219	3,810	3,543	3,397	3,352	3,476	3,770	4,056	4,411	4,773	5,249	5,764	6,504	7,044	7,467	7,814	7,924	7,828	7,599	7,221	6,860	6,345	5,592	4,896
5/11/2023	4,406	4,101	3,855	3,722	3,673	3,833	4,194	4,451	4,693	5,072	5,563	6,192	6,804	7,292	7,816	8,202	8,354	8,237	7,893	7,208	6,845	6,317	5,638	5,004
5/12/2023	4,535	4,156	3,886	3,666	3,612	3,760	4,074	4,357	4,718	5,111	5,515	6,043	6,711	7,110	7,446	7,594	7,781	7,748	7,576	7,084	6,614	6,065	5,509	4,968
5/13/2023	4,490	4,119	3,847	3,620	3,505	3,526	3,602	3,793	4,236	4,757	5,185	5,666	6,199	6,619	6,875	6,997	7,042	6,745	6,377	5,936	5,664	5,369	4,958	4,496
5/14/2023	3,975	3,676	3,456	3,303	3,210	3,223	3,258	3,495	3,963	4,464	4,887	5,339	5,797	6,114	6,428	6,800	7,041	7,202	7,215	6,708	6,211	5,758	5,204	4,549
5/15/2023	4,027	3,652	3,409	3,285	3,310	3,418	3,721	4,005	4,350	4,736	5,203	5,690	6,169	6,723	7,178	7,608	7,639	7,685	7,534	7,112	6,663	6,198	5,524	4,863
5/16/2023	4,289	3,887	3,636	3,477	3,461	3,631	3,936	4,217	4,525	4,857	5,282	5,897	6,502	6,967	7,379	7,653	7,945	8,093	7,823	7,451	7,035	6,607	5,824	5,087
5/17/2023	4,601	4,250	4,007	3,803	3,749	3,855	4,134	4,438	4,854	5,265	5,804	6,427	6,877	7,277	7,589	7,702	7,728	7,659	7,507	7,095	6,772	6,230	5,560	4,898
5/18/2023	4,392	3,987	3,741	3,580	3,528	3,658	3,951	4,274	4,634	5,044	5,544	6,178	6,689	7,103	7,429	7,691	7,840	7,882	7,628	7,100	6,701	6,128	5,461	4,784
5/19/2023	4,302	3,916	3,674	3,530	3,475	3,587	3,846	4,129	4,504	4,950	5,471	6,032	6,548	7,008	7,343	7,569	7,641	7,600	7,328	6,950	6,685	6,327	5,811	5,274
5/20/2023	4,776	4,258	3,924	3,748	3,688	3,686	3,737	3,996	4,379	5,093	5,678	6,278	6,850	7,183	7,455	7,764	7,627	7,508	7,373	7,031	6,764	6,346	5,832	5,292
5/21/2023	4,785	4,300	3,999	3,823	3,709	3,664	3,680	3,932	4,482	5,254	5,851	6,266	6,686	7,193	7,421	7,615	7,684	7,650	7,350	6,922	6,638	6,318	5,801	5,149
5/22/2023	4,522	4,146	3,911	3,785	3,764	3,922	4,193	4,472	4,830	5,270	5,781	6,501	7,044	7,488	7,597	7,439	7,227	7,166	6,825	6,648	6,356	5,859	5,306	4,496
5/23/2023	4,107	3,827	3,622	3,496	3,540	3,679	4,009	4,270	4,529	4,835	5,219	5,690	6,211	6,697	6,992	7,201	7,093	6,825	6,541	6,316	6,071	5,483	4,931	4,389
5/24/2023	3,974	3,718	3,514	3,425	3,439	3,609	3,941	4,181	4,436	4,717	5,112	5,536	5,963	6,257	6,152	6,092	5,867	5,504	5,251	5,098	5,056	4,862	4,426	3,997
5/25/2023	3,650	3,388	3,236	3,150	3,153	3,324	3,683	3,917	4,155	4,469	4,849	5,285	5,684	5,996	6,180	6,377	6,475	6,391	6,069	5,756	5,567	5,205	4,767	4,308
5/26/2023	3,852	3,441	3,236	3,176	3,187	3,318	3,629	3,871	4,167	4,521	4,902	5,372	5,603	5,764	5,724	5,809	5,732	5,680	5,585	5,309	5,193	4,910	4,437	3,997
5/27/2023	3,633	3,340	3,087	2,946	2,875	2,889	2,955	3,111	3,450	3,750	4,029	4,255	4,575	4,907	5,253	5,732	5,957	6,204	6,146	5,789	5,391	5,092	4,671	4,147
5/28/2023	3,778	3,479	3,229	3,067	3,004	2,936	2,983	3,094	3,471	3,873	4,216	4,596	5,007	5,388	5,760	6,016	6,198	6,407	6,266	5,928	5,591	5,251	4,775	4,267
5/29/2023	3,882	3,568	3,289	3,141	3,107	3,134	3,166	3,224	3,640	4,064	4,543	4,887	5,230	5,571	5,891	6,112	6,482	6,551	6,305	6,051	5,769	5,451	4,878	4,268
5/30/2023	3,773	3,429	3,228	3,091	3,087	3,248	3,519	3,755	4,108	4,470	4,889	5,332	5,788	6,134	6,605	7,091	7,356	7,506	7,355	6,974	6,481	6,125	5,402	4,818
5/31/2023	4,343	4,046	3,796	3,643	3,637	3,742	3,990	4,199	4,474	4,850	5,340	5,918	6,287	6,580	6,689	6,713	6,653	6,452	6,177	5,822	5,681	5,353	4,914	4,442
6/1/2023	4,052	3,739	3,531	3,428	3,446	3,574	3,836	4,100	4,448	4,857	5,238	5,854	6,274	6,734	7,079	7,151	7,132	6,827	6,328	5,969	5,758	5,548	5,122	4,587
6/2/2023	4,191	3,866	3,616	3,501	3,487	3,578	3,811	4,126	4,532	4,926	5,344	5,861	6,880	7,281	7,410	7,211	7,100	6,676	6,370	5,872	5,684	5,434	5,027	4,491
6/3/2023	4,062	3,725	3,510	3,399	3,336	3,372	3,447	3,663	4,022	4,471	4,937	5,391	5,826	6,282	6,749	6,910	6,762	6,572	6,324	6,027	5,624	5,355	4,943	4,449
6/4/2023	4,055	3,684	3,462	3,334	3,258	3,255	3,288	3,513	3,934	4,425	4,931	5,418	6,076	6,482	6,729	6,917	7,030	6,913	6,436	5,938	5,657	5,411	4,973	4,413
6/5/2023	3,993	3,681	3,493	3,369	3,364	3,487	3,733	4,051	4,398	4,762	5,144	5,523	5,908	6,269	6,668	6,967	7,123	7,213	7,128	6,746	6,321	5,933	5,320	4,635
6/6/2023	4,136	3,753	3,473	3,351	3,314	3,441	3,706	3,963	4,297	4,630	5,079	5,500	6,113	6,676	7,136	7,565	7,920	7,993	7,935	7,409	6,782	6,425	5,662	4,968
6/7/2023	4,477	4,079	3,782	3,631	3,589	3,706	3,943	4,226	4,588	5,090	5,854	6,276	6,738	7,180	7,225	7,093	7,220	7,234	7,082	6,758	6,379	6,063	5,460	4,784
6/8/2023	4,302	3,973	3,708	3,591	3,568	3,698	3,940	4,355	4,792	5,179	5,862	6,435	6,837	7,028	7,235	7,626	7,817	7,999	7,926	7,482	6,928	6,372	5,773	5,110
6/9/2023	4,617	4,223	3,954	3,826	3,773	3,843	4,020	4,313	4,762	5,200	5,690	6,216	6,835	7,288	7,643	7,924	8,045	7,980	7,578	6,857	6,450	6,075	5,579	5,024
6/10/2023	4,583	4,197	3,970	3,769	3,643	3,638	3,684	3,883	4,371	4,922	5,480	6,045	6,610	7,198	7,503	7,731	7,858	7,784	7,424	6,812	6,431	6,083	5,596	5,051
6/11/2023	4,609	4,241	4,001	3,751	3,606	3,591	3,634	3,859	4,387	4,992	5,578	6,136	6,770	7,278	7,584	7,862	7,965	7,985	7,869	7,592	7,234	6,732	6,139	5,421
6/12/2023	4,889	4,471	4,140	3,991	3,927	4,020	4,276	4,639	5,107	5,600	6,151	6,690	7,308	7,749	7,982	8,261	8,541	8,625	8,516	8,215	7,798	7,301	6,499	5,765
6/13/2023	5,186	4,713	4,365	4,151	4,108	4,179	4,405	4,801	5,212	5,721	6,319	6,834	7,511	8,006	8,400	8,827	8,996	9,025	8,946	8,380	7,807	7,357	6,607	5,824
6/14/2023	5,226	4,768	4,466	4,319	4,240	4,330	4,544	4,890	5,321	5,884	6,449	7,025	7,678	8,134	8,611	8,904	8,873	8,919	8,729	8,362	7,951	7,437	6,740	5,994
6/15/2023	5,531	4,955	4,436	4,090	3,944	4,005	4,188	4,485	4,864	5,277	5,901	6,431	7,256	7,735	8,310	8,632	8,651	8,528	7,870	7,369	6,885	6,391	5,856	5,180
6/16/2023	4,713	4,369	4,116	4,028	3,975	4,063	4,282	4,573	4,866	5,211	5,653	6,264	6,974	7,621	8,004	7,999	7,629	7,278	6,837	6,456	6,284	6,097	5,692	5,178
6/17/2023	4,810	4,479	4,251	4,151	4,107	4,151	4,211	4,602	5,058	5,538	5,540	5,777	5,777	5,819	6,246	6,924	7,396	7,417	7,075	6,540	6,270	5,918	5,446	4,920
6/18/2023	4,330	3,908	3,672	3,475	3,405	3,351	3,390	3,589	4,056	4,638	5,222	5,762	6,549	6,927	7,400	7,841	8,041	8,087	7,904	7,295	6,808	6,285	5,791	5,169
6/19/2023	4,651	4,288	4,039	3,931	3,928	4,074	4,305	4,550	4,968	5,488	6,116	6,858	7,661	8,125	8,450	8,694	8,872	8,939	8,771	8,387	7,756	6,848	5,993	5,341
6/20/2023	4,912	4,507	4,258	4,133	4,121	4,267	4,526	4,768	5,255	5,600	6,064	6,510	6,947	7,210	7,043	6,829	6,744	6,815	6,681	6,531	6,342	6,063	5,574	5,058
6/21/2023	4,691	4,370	4,206	4,090	4,032	4,017	4,166	4,345	4,501	4,621	4,735	4,963	5,504	5,961	5,896	5,821	5,482	5,468	5,369	5,233	5,182	5,083	4,715	4,230
6/22/2023	3,863	3,614	3,441	3,329	3,329	3,505	3,785	4,096	4,456	4,830	5,367	5,944	6,458	7,015	7,213	6,809	6,598	6,531	6,377	6,113	5,949	5,753	5,354	4,811
6/23/2023	4,410	4,154	3,945	3,843	3,881	3,985	4,231	4,398	4,538	4,674	4,938	5,219	5,909	6,505	7,334	7,659	7,931	8,281	8,059	7,482	6,794	6,180	5,621	5,062
6/24/2023	4,447	4,118	3,900	3,774	3,739	3,693	3,768	3,944	4,425	5,068	5,862	6,672	7,350	7,806	8,059	8,193	8,298	8,240	8,140	7,719	7,092	6,496	5,802	5,248

6/25/2023	4,737	4,375	4,125	3,961	3,910	3,865	3,841	3,994	4,436	4,984	5,565	6,114	6,683	7,207	7,623	7,957	8,258	8,328	8,140	7,725	7,244	6,871	6,243	5,471
6/26/2023	4,873	4,443	4,152	3,917	3,860	3,963	4,203	4,492	4,905	5,548	6,392	7,167	7,722	8,157	8,525	8,829	9,113	9,232	8,921	8,518	8,104	7,643	6,911	6,091
6/27/2023	5,475	4,877	4,403	4,205	4,148	4,248	4,445	4,741	5,201	5,823	6,595	7,208	7,847	8,309	8,617	8,943	9,280	9,265	9,127	8,767	8,262	7,698	6,881	6,206
6/28/2023	5,622	5,234	4,915	4,751	4,726	4,814	5,045	5,315	5,670	6,172	6,722	7,317	7,892	8,083	8,052	8,350	8,755	8,959	8,854	8,422	7,844	7,451	6,670	5,847
6/29/2023	5,394	4,934	4,610	4,436	4,368	4,504	4,740	5,008	5,430	5,969	6,675	7,483	8,106	8,574	8,992	9,180	9,322	9,219	9,025	8,659	8,235	7,777	7,145	6,146
6/30/2023	5,361	4,873	4,559	4,243	4,164	4,190	4,337	4,579	4,971	5,468	6,050	6,722	7,507	8,045	8,435	8,713	8,811	8,816	8,643	8,392	7,860	7,492	6,813	5,993
7/1/2023	5,313	4,882	4,459	4,232	4,075	4,015	3,982	4,196	4,684	5,402	6,243	6,995	7,580	8,073	8,571	8,721	9,005	9,013	8,916	8,542	7,539	7,250	6,533	5,834
7/2/2023	5,369	4,921	4,562	4,334	4,189	4,140	4,085	4,273	4,771	5,424	6,230	7,005	7,682	8,103	8,334	8,605	8,843	8,957	8,896	8,597	8,170	7,587	6,856	6,137
7/3/2023	5,567	5,111	4,736	4,520	4,394	4,451	4,562	4,809	5,333	6,068	6,826	7,786	8,349	8,727	9,025	9,188	9,283	9,250	9,012	8,524	8,016	7,488	6,712	6,046
7/4/2023	5,519	5,076	4,755	4,550	4,446	4,382	4,361	4,491	5,012	5,721	6,589	7,502	8,226	8,682	8,977	9,266	9,374	9,120	8,766	8,172	7,706	7,184	6,802	6,177
7/5/2023	5,578	5,180	4,900	4,713	4,631	4,702	4,861	5,119	5,587	6,193	7,007	7,973	8,654	9,207	9,207	8,960	8,822	8,619	8,300	7,948	7,563	7,125	6,403	5,743
7/6/2023	5,196	4,817	4,553	4,417	4,356	4,440	4,591	4,880	5,384	5,973	6,648	7,414	8,227	8,707	9,013	9,021	9,013	8,851	8,474	8,143	7,732	7,321	6,698	6,075
7/7/2023	5,608	5,210	4,916	4,753	4,649	4,725	4,882	5,063	5,519	6,073	6,677	7,407	7,829	8,118	8,276	8,402	8,365	8,193	7,887	7,441	7,091	6,642	6,045	5,525
7/8/2023	5,122	4,781	4,558	4,462	4,397	4,357	4,401	4,603	5,052	5,397	5,593	5,939	6,244	6,513	6,890	7,084	7,026	7,092	7,007	6,925	6,782	6,539	6,058	5,456
7/9/2023	5,099	4,615	4,394	4,251	4,194	4,195	4,212	4,464	5,139	6,056	6,698	7,341	8,003	8,362	8,643	8,698	8,739	8,701	8,612	8,625	8,100	7,621	6,795	5,910
7/10/2023	5,458	5,052	4,852	4,664	4,606	4,646	4,867	5,134	5,577	6,089	6,697	7,337	7,974	8,315	8,446	8,262	7,659	7,268	6,961	6,729	6,474	6,313	5,810	5,133
7/11/2023	4,755	4,400	4,231	4,157	4,180	4,307	4,561	4,850	5,212	5,682	6,268	6,592	6,552	6,485	6,728	7,150	7,582	7,999	8,149	7,915	7,407	7,158	6,353	5,605
7/12/2023	5,109	4,747	4,495	4,293	4,252	4,334	4,573	4,826	5,291	5,730	6,474	7,238	7,979	8,492	8,729	8,525	8,386	8,288	8,249	8,048	7,659	7,223	6,427	5,745
7/13/2023	5,396	4,806	4,529	4,332	4,255	4,331	4,566	4,813	5,265	5,932	6,691	7,372	7,732	8,150	8,614	8,859	9,208	9,240	9,053	8,522	7,930	7,608	6,552	5,902
7/14/2023	5,288	4,875	4,597	4,412	4,333	4,421	4,579	4,812	5,245	5,764	6,481	7,195	8,020	8,483	8,774	8,978	9,008	8,706	8,420	7,870	7,505	6,864	6,269	5,676
7/15/2023	5,233	4,837	4,557	4,421	4,285	4,242	4,264	4,436	5,006	5,771	6,521	7,257	7,876	8,346	8,618	8,580	8,508	8,456	8,137	7,643	7,173	6,636	6,136	5,618
7/16/2023	5,233	4,922	4,675	4,484	4,391	4,347	4,394	4,561	5,053	5,852	6,603	7,300	7,601	7,469	7,277	7,214	7,145	7,004	6,791	6,533	6,327	6,017	5,621	5,169
7/17/2023	4,751	4,490	4,324	4,269	4,264	4,381	4,664	4,910	5,352	5,955	6,761	7,343	7,729	7,806	7,940	7,955	8,031	8,103	7,987	7,744	7,438	6,964	6,221	5,554
7/18/2023	5,119	4,784	4,475	4,263	4,226	4,325	4,563	4,824	5,192	5,615	6,111	6,746	7,309	7,563	7,774	7,986	8,359	8,577	8,404	7,949	7,377	6,957	6,137	5,329
7/19/2023	4,833	4,520	4,250	4,125	4,079	4,149	4,403	4,721	5,127	5,704	6,472	7,262	8,037	8,470	8,909	9,208	9,298	8,933	8,504	8,032	7,642	7,298	6,651	5,828
7/20/2023	5,131	4,776	4,510	4,361	4,321	4,416	4,665	4,938	5,279	5,747	6,544	7,402	8,147	8,697	9,072	9,434	9,614	9,630	9,579	9,039	8,598	7,990	7,170	6,471
7/21/2023	5,680	5,250	4,915	4,691	4,575	4,639	4,819	5,059	5,581	6,247	7,101	7,800	8,407	8,862	9,152	9,467	9,725	9,708	9,434	8,902	8,560	8,107	7,321	6,678
7/22/2023	6,084	5,489	5,139	4,936	4,753	4,690	4,694	4,861	5,419	6,280	7,246	7,935	8,375	8,756	8,993	8,985	8,890	8,923	8,708	8,292	7,774	7,251	6,642	6,090
7/23/2023	5,599	5,020	4,706	4,458	4,306	4,292	4,280	4,509	5,182	6,009	6,824	7,609	7,903	7,667	7,340	7,133	7,038	7,133	6,908	6,718	6,553	6,428	5,877	5,191
7/24/2023	4,816	4,478	4,101	4,013	4,018	4,159	4,494	4,758	5,193	5,827	6,681	7,175	7,498	7,490	7,175	7,205	7,361	7,335	7,126	6,891	6,748	6,489	6,017	5,012
7/25/2023	4,517	4,206	4,060	3,912	3,854	3,968	4,212	4,468	4,866	5,392	5,967	6,891	7,528	8,026	8,276	8,234	8,168	8,284	8,138	7,833	7,528	7,060	6,213	5,428
7/26/2023	4,956	4,603	4,348	4,200	4,117	4,207	4,445	4,727	5,149	5,719	6,440	7,226	7,883	8,297	8,528	8,670	8,921	8,949	8,561	7,932	7,502	7,018	6,370	5,542
7/27/2023	4,934	4,606	4,325	4,097	4,019	4,147	4,413	4,658	5,070	5,545	6,179	6,691	7,087	7,155	7,435	7,531	7,756	7,740	7,579	7,444	7,258	6,904	6,281	5,666
7/28/2023	5,080	4,551	4,224	4,103	4,070	4,136	4,365	4,655	5,116	5,881	6,559	7,232	7,803	8,175	8,523	8,653	8,742	8,549	8,045	7,466	7,150	6,843	6,390	5,656
7/29/2023	5,095	4,593	4,296	4,166	4,114	4,089	4,161	4,375	4,871	5,551	6,469	7,257	7,637	7,935	8,162	8,249	8,366	8,408	8,232	7,796	7,480	7,160	6,575	5,818
7/30/2023	5,314	4,890	4,576	4,355	4,227	4,208	4,256	4,435	4,968	5,828	6,780	7,484	8,062	8,584	8,968	9,205	9,318	9,164	8,746	8,078	7,551	6,963	6,257	5,594
7/31/2023	5,141	4,712	4,460	4,289	4,205	4,326	4,568	4,819	5,142	5,691	6,577	7,383	7,913	8,208	8,061	7,560	7,299	7,035	6,805	6,620	6,377	6,102	5,396	4,785
8/1/2023	4,363	4,063	3,857	3,730	3,732	3,892	4,152	4,425	4,820	5,471	6,265	7,048	7,528	7,870	8,179	8,646	8,873	8,929	8,663	8,338	8,059	7,636	6,923	6,068
8/2/2023	5,498	5,061	4,667	4,503	4,416	4,489	4,753	4,923	5,220	5,857	6,681	7,395	7,822	8,158	8,521	8,739	8,850	8,638	8,363	7,901	7,437	7,006	6,312	5,670
8/3/2023	5,109	4,736	4,476	4,304	4,260	4,338	4,613	4,877	5,247	5,870	6,540	7,197	7,839	8,316	8,630	8,800	8,808	8,683	8,486	8,089	7,746	7,154	6,340	5,702
8/4/2023	5,181	4,784	4,521	4,293	4,242	4,466	4,754	4,888	5,422	5,937	6,683	7,545	7,928	8,384	8,638	8,880	9,001	8,862	8,461	8,013	7,610	7,119	6,407	5,827
8/5/2023	5,406	5,013	4,765	4,570	4,411	4,363	4,403	4,537	5,036	5,701	6,451	7,294	7,905	8,334	8,469	8,335	8,260	8,304	8,352	8,051	7,815	7,342	6,720	6,131
8/6/2023	5,640	5,081	4,737	4,568	4,438	4,371	4,400	4,554	5,074	5,899	6,737	7,519	8,079	8,191	8,122	8,081	8,380	8,641	8,699	8,454	7,971	7,473	6,804	6,142
8/7/2023	5,622	5,215	4,932	4,731	4,681	4,809	5,036	5,271	5,735	6,370	7,148	8,035	8,764	9,201	9,584	9,873	10,027	10,075	9,920	9,525	9,184	8,492	7,627	6,875
8/8/2023	6,210	5,682	5,286	5,092	5,029	5,039	5,270	5,503	5,868	6,585	7,404	8,262	8,970	9,513	9,876	10,108	10,268	10,238	10,060	9,680	9,359	8,808	8,023	6,973
8/9/2023	6,277	5,720	5,401	5,214	5,087	5,168	5,445	5,875	6,397	7,118	7,806	8,517	9,219	9,629	9,894	10,151	10,220	10,186	9,984	9,713	9,378	8,793	7,865	6,890
8/10/2023	6,355	5,904	5,572	5,342	5,448	5,846	6,220	6,341	6,714	7,333	7,979	8,598	9,086	9,486	9,651	9,844	9,878	9,847	9,684	9,382	9,148	8,695	7,996	7,102
8/11/2023	6,515	5,966	5,627	5,303	5,140	5,231	5,394	5,531	5,992	6,864	7,708	8,449	9,119	9,477	9,829	10,024	10,146	10,234	9,989	9,522	9,104	8,587	7,706	6,853
8/12/2023	6,339	5,922	5,510	5,273	5,130	5,080	5,071	5,129	5,573	6,368	7,241	8,074	8,660	9,087	9,402	9,708	9,903	9,830	9,562	9,153	8,653	8,247	7,547	6,837
8/13/2023	6,137	5,729	5,420	5,184	4,991	4,898	4,869	4,928	5,372	6,086	7,001	7,880	8,624	9,069	9,520	9,771	9,834	9,891	9,666	9,300	8,910	8,277	7,435	6,651
8/14/2023	5,987	5,511	5,197	5,016	4,993	5,137	5,406	5,605	5,969	6,667	7,519	8,269	8,698	9,010	8,608	8,354	8,265	8,123	8,039	7,747	7,546	7,149	6,395	5,662
8/15/2023	5,281	4,882	4,661	4,527	4,541	4,698	4,972	5,165	5,500	6,115	6,913	7,630	8,270	8,667	8,961	9,256	9,398	9,489	9,251	8,732	8,322	7,559	6,668	6,071
8/16/2023	5,513	5,117	4,822	4,689	4,659	4,787	5,113	5,268	5,476	5,811	6,226	6,706	7,423	8,162	8,624	8,703	8,624	8,454	8,148	7,808	7,566	6,982	6,187	5,556
8/17/2023	5,215	4,717	4,515	4,393	4,405	4,583	4,889	5,088	5,309	5,758	6,451	7,163	7,895	8,277	8,169	7,637	7,348	7,253	7,199	7,056	6,664	6,292	5,751	5,143
8/18/2023	4,759	4,471	4,261	4,142	4,159	4,341	4,632	4,839	5,135	5,642	6,172	6,852	7,419	7,950	7,837	7,664	7,483	7,183	6,956	6,738	6,552	6,084	5,683	5,201
8/19/2023	4,788	4,472	4,193	4,027	3,934	3,966	4,042	4,265	4,651	5,256	5,935	6,614	7,446	8,130	8,528	8,798	8,949	9,061	8,894	8,434	7,852	7,252	6,586	5,988
8/20/2023	5,528	5,121	4,824	4,573	4,439	4,398	4,430	4,610	5,041	5,705	6,277	6,806	7,458	7,736	7,782	7,575	7,494	7,417	7,288	7,079	6,912	6,453	5,915	5,312
8/21/2023	4,888	4,546	4,446	4,343	4,384	4,544	4,877	5,122	5,405	5,847	6,727	7,558	8,294	8,659	8,983	9,221	9,459	9,569	9,387	8,882	8,276	7,551	6,826	6,008
8/22/2023	5,442	4,996	4,729	4,534	4,478	4,573	4,840	5,002	5,272	5,638	6,217	7,020	7,739	8,300	8,653	8,985	9,227	9,327	9,318	8,853	8,409	7,861	6,934	5,955
8/23/2023	5,354	4,972	4,681	4,519	4,446	4,525	4,852	5,134	5,351	5,815	6,528	7,357	7,944	8,506	8,886	9,199	9,318	9,263	9,040	8,478	8,188	7,587	6,806	5,984
8/24/2023	5,495	5,125	4,851	4,677	4,664	4,790	5,091	5,371	5,618	6,038	6,583	7,267	7,886	8,356	8,650	8,898	9,162	9,162	8,919	8,451	8,144	7,517	6,476	5,621

8/25/2023	5,069	4,704	4,390	4,180	4,127	4,266	4,542	4,772	5,054	5,524	6,131	6,924	7,675	8,211	8,664	9,072	9,262	9,291	9,136	8,689	8,267	7,681	6,765	5,981
8/26/2023	5,489	5,067	4,705	4,508	4,356	4,306	4,366	4,442	4,855	5,375	6,143	6,937	7,795	8,347	8,694	8,950	9,059	8,781	8,511	7,961	7,652	7,015	6,430	5,848
8/27/2023	5,314	4,843	4,563	4,358	4,215	4,138	4,171	4,253	4,643	5,302	6,008	6,827	7,699	8,183	8,578	8,761	8,796	8,824	8,328	8,020	7,842	7,193	6,426	5,821
8/28/2023	5,344	4,982	4,706	4,544	4,509	4,683	5,002	5,178	5,455	5,948	6,475	7,205	7,943	8,473	8,749	8,977	9,186	9,147	8,735	8,333	7,984	7,372	6,504	5,881
8/29/2023	5,362	4,955	4,759	4,595	4,561	4,722	5,020	5,230	5,456	5,895	6,472	7,210	7,832	8,285	8,222	8,089	8,026	7,640	6,993	6,598	6,214	5,742	5,320	4,888
8/30/2023	4,644	4,421	4,337	4,250	4,273	4,367	4,521	4,593	4,749	4,971	5,193	5,370	5,540	5,785	5,920	6,072	6,116	6,278	6,200	6,115	6,018	5,682	5,229	4,806
8/31/2023	4,473	4,235	4,064	3,967	3,981	4,115	4,466	4,683	4,885	5,182	5,654	6,236	6,940	7,472	7,958	8,139	7,909	7,840	7,626	7,033	6,799	6,385	5,899	5,286
9/1/2023	4,743	4,441	4,221	4,075	4,059	4,223	4,514	4,740	4,973	5,528	6,300	7,051	7,515	7,760	7,878	7,887	7,884	7,528	7,040	6,618	6,398	5,983	5,477	5,009
9/2/2023	4,631	4,359	4,155	3,986	3,910	3,902	3,938	4,091	4,423	4,947	5,359	5,755	6,328	6,845	7,217	7,367	7,453	7,370	7,096	6,706	6,298	5,777	5,308	4,803
9/3/2023	4,371	4,074	3,815	3,614	3,483	3,446	3,474	3,607	3,950	4,616	5,241	5,807	6,506	7,133	7,429	7,687	8,032	8,088	8,000	7,600	7,092	6,451	5,729	4,970
9/4/2023	4,493	4,118	3,797	3,638	3,536	3,513	3,534	3,636	3,957	4,502	5,072	5,834	6,582	7,035	7,445	7,762	8,185	8,312	8,111	7,627	7,351	6,771	5,946	5,021
9/5/2023	4,453	4,095	3,839	3,694	3,646	3,784	4,089	4,291	4,518	4,935	5,467	6,361	7,104	7,608	7,949	8,245	8,460	8,582	8,539	8,155	7,805	7,168	6,022	5,297
9/6/2023	4,765	4,458	4,222	4,052	3,997	4,139	4,413	4,611	4,810	5,186	5,638	6,189	6,969	7,692	8,305	8,610	8,800	8,919	8,776	8,230	7,784	7,047	6,352	5,627
9/7/2023	4,997	4,561	4,258	4,089	4,025	4,162	4,469	4,638	4,904	5,340	6,007	6,710	7,488	7,942	8,234	8,644	9,006	8,967	8,669	8,103	7,814	7,212	6,276	5,679
9/8/2023	5,197	4,770	4,509	4,301	4,249	4,351	4,674	4,850	5,129	5,462	5,605	5,801	6,048	6,096	5,646	5,476	5,564	6,055	6,197	6,149	5,879	5,434	4,998	4,396
9/9/2023	4,026	3,706	3,509	3,374	3,329	3,370	3,446	3,608	3,951	4,464	5,127	5,830	6,445	7,049	7,260	7,211	7,354	7,496	7,328	6,967	6,487	5,924	5,395	4,908
9/10/2023	4,520	4,190	3,945	3,798	3,675	3,673	3,721	3,844	4,224	4,833	5,467	6,245	7,092	7,717	8,108	8,423	8,669	8,803	8,559	8,149	7,820	7,128	6,225	5,479
9/11/2023	5,002	4,640	4,374	4,237	4,163	4,336	4,658	4,794	5,048	5,504	6,162	7,069	7,849	8,318	8,747	9,081	9,281	9,226	9,035	8,479	7,824	6,763	5,950	5,299
9/12/2023	4,772	4,387	4,158	4,004	3,988	4,115	4,420	4,626	4,775	5,190	5,788	6,669	7,355	8,024	8,454	8,878	9,040	9,068	8,799	8,124	7,688	6,924	6,192	5,468
9/13/2023	5,023	4,734	4,440	4,267	4,206	4,366	4,642	4,798	5,072	5,495	6,114	6,923	7,580	8,062	8,492	8,782	9,022	8,814	8,463	8,019	7,607	6,945	6,155	5,496
9/14/2023	4,963	4,575	4,335	4,203	4,176	4,337	4,626	4,751	5,007	5,488	6,068	6,900	7,603	8,073	8,335	8,490	8,687	8,643	8,281	7,747	7,399	6,669	6,028	5,364
9/15/2023	4,883	4,569	4,334	4,176	4,136	4,293	4,577	4,805	5,062	5,488	6,055	6,736	7,454	8,064	8,561	8,754	8,783	8,622	8,223	7,688	7,341	6,736	6,037	5,420
9/16/2023	4,965	4,608	4,340	4,228	4,122	4,084	4,099	4,263	4,613	5,126	5,734	6,407	7,103	7,618	7,926	8,151	8,223	8,036	7,776	7,273	6,806	6,309	5,799	5,269
9/17/2023	4,869	4,527	4,348	4,153	4,063	4,010	4,031	4,210	4,631	5,251	5,891	6,668	7,346	7,911	8,277	8,621	8,853	8,969	8,620	8,140	7,761	7,069	6,259	5,556
9/18/2023	5,098	4,732	4,504	4,367	4,327	4,446	4,731	4,916	5,094	5,386	5,863	6,250	6,843	7,491	7,891	8,249	8,446	8,389	7,968	7,476	7,105	6,366	5,653	5,002
9/19/2023	4,549	4,244	4,064	3,942	3,896	4,022	4,347	4,547	4,614	4,839	5,160	5,573	6,096	6,680	7,119	7,353	7,468	7,445	7,107	6,818	6,601	6,017	5,430	4,861
9/20/2023	4,474	4,133	3,952	3,854	3,882	4,060	4,386	4,619	4,737	5,151	5,671	6,177	6,861	7,458	7,832	8,077	7,968	7,614	7,114	6,639	6,152	5,739	5,182	4,574
9/21/2023	4,126	3,856	3,697	3,597	3,607	3,753	4,053	4,328	4,552	4,798	5,217	5,801	6,442	7,119	7,572	7,813	7,879	7,634	7,282	7,007	6,711	6,168	5,396	4,743
9/22/2023	4,242	3,872	3,655	3,529	3,553	3,716	4,074	4,262	4,429	4,771	5,153	5,680	6,272	6,770	7,140	7,204	7,416	7,260	6,891	6,492	5,993	5,496	5,024	4,468
9/23/2023	4,039	3,725	3,509	3,347	3,273	3,271	3,336	3,472	3,800	4,099	4,463	4,810	5,211	5,693	6,087	6,492	6,739	6,849	6,640	6,005	5,678	5,239	4,798	4,278
9/24/2023	3,904	3,597	3,365	3,217	3,113	3,108	3,193	3,343	3,656	4,021	4,347	4,803	5,340	5,849	6,396	6,792	7,179	7,360	7,247	6,781	6,402	5,857	5,342	4,766
9/25/2023	4,328	4,014	3,832	3,743	3,746	3,892	4,207	4,449	4,632	4,885	5,299	5,923	6,698	7,394	8,021	8,304	8,456	8,418	8,068	7,479	6,810	6,178	5,608	5,045
9/26/2023	4,580	4,233	3,993	3,884	3,903	4,092	4,408	4,664	4,875	5,223	5,682	6,101	6,693	7,094	7,403	7,721	7,781	7,688	7,338	6,797	6,422	6,003	5,464	4,859
9/27/2023	4,458	4,192	4,012	3,905	3,903	4,105	4,449	4,736	4,860	5,018	5,246	5,604	6,075	6,745	6,977	7,205	7,325	7,289	6,976	6,551	6,283	5,795	5,313	4,735
9/28/2023	4,248	3,932	3,755	3,652	3,726	3,908	4,227	4,549	4,684	4,896	5,191	5,563	6,020	6,343	6,642	6,773	6,769	6,739	6,623	6,408	6,246	5,829	5,312	4,714
9/29/2023	4,302	4,092	3,872	3,787	3,868	4,050	4,268	4,521	4,662	4,841	5,131	5,500	5,932	6,445	6,759	7,034	7,191	7,210	6,911	6,628	6,224	5,885	5,486	4,969
9/30/2023	4,642	4,364	4,144	4,006	3,982	4,006	4,065	4,235	4,526	4,907	5,310	5,775	6,227	6,608	7,061	7,349	7,526	7,383	7,080	6,604	6,173	5,825	5,419	4,937
10/1/2023	4,577	4,294	4,108	3,987	3,931	3,901	3,979	4,162	4,444	4,852	5,145	5,464	5,841	6,073	6,179	6,171	6,186	6,129	6,018	5,927	5,763	5,426	4,963	4,415
10/2/2023	4,059	3,779	3,536	3,430	3,463	3,665	3,998	4,241	4,366	4,634	4,926	5,305	5,743	6,022	6,372	6,651	6,924	6,969	6,765	6,503	6,090	5,634	5,116	4,486
10/3/2023	4,192	3,804	3,573	3,448	3,440	3,609	3,901	4,067	4,183	4,425	4,759	5,190	5,688	6,124	6,367	6,739	6,814	6,800	6,551	6,406	6,080	5,560	4,994	4,368
10/4/2023	3,999	3,735	3,551	3,432	3,462	3,705	4,057	4,261	4,423	4,724	5,078	5,579	6,132	6,400	6,717	6,928	7,101	7,221	6,995	6,791	6,478	5,987	5,354	4,631
10/5/2023	4,211	3,940	3,722	3,602	3,604	3,771	4,109	4,279	4,460	4,812	5,339	5,879	6,348	6,785	7,129	7,394	7,659	7,649	7,267	7,083	6,755	6,347	5,707	5,047
10/6/2023	4,484	4,142	3,899	3,761	3,770	3,923	4,238	4,409	4,602	4,867	5,368	5,944	6,491	6,920	7,273	7,593	7,753	7,582	7,176	6,833	6,484	6,014	5,583	5,012
10/7/2023	4,519	4,137	3,936	3,808	3,711	3,722	3,804	3,945	4,221	4,583	5,008	5,717	6,223	6,662	6,845	6,937	6,837	6,578	6,359	6,118	5,865	5,446	5,054	4,529
10/8/2023	4,208	3,860	3,631	3,410	3,216	3,155	3,161	3,221	3,423	3,662	3,826	3,996	4,176	4,335	4,444	4,551	4,660	4,667	4,667	4,733	4,627	4,273	3,908	3,460
10/9/2023	3,171	2,977	2,832	2,773	2,825	3,024	3,355	3,517	3,633	3,687	3,739	3,867	3,983	4,139	4,241	4,504	4,826	4,967	5,032	5,018	4,809	4,474	4,009	3,523
10/10/2023	3,183	2,995	2,886	2,862	2,908	3,110	3,453	3,662	3,710	3,788	3,975	4,193	4,591	5,019	5,564	5,870	6,060	6,147	5,978	5,959	5,592	5,093	4,559	4,072
10/11/2023	3,689	3,461	3,310	3,245	3,307	3,516	3,902	4,168	4,310	4,517	4,771	4,970	5,447	5,863	6,163	6,401	6,564	6,512	6,398	6,326	5,972	5,567	5,109	4,621
10/12/2023	4,358	4,187	4,100	4,099	4,224	4,534	5,056	5,412	5,636	5,949	6,248	6,540	6,568	6,552	6,467	6,551	6,700	6,836	6,840	6,810	6,549	6,162	5,714	5,068
10/13/2023	4,629	4,358	4,119	4,016	4,004	4,178	4,498	4,688	4,881	5,184	5,620	6,056	6,406	6,804	7,255	7,583	7,837	7,859	7,482	7,080	6,655	6,104	5,522	5,000
10/14/2023	4,589	4,221	3,985	3,857	3,755	3,759	3,783	3,885	4,171	4,536	4,859	5,146	5,450	5,575	5,522	5,929	6,253	6,281	6,115	5,798	5,442	4,974	4,613	4,180
10/15/2023	3,904	3,588	3,442	3,326	3,301	3,284	3,350	3,447	3,724	4,055	4,254	4,469	4,678	4,840	5,013	5,152	5,221	5,233	5,041	4,967	4,770	4,441	4,077	3,614
10/16/2023	3,346	3,092	2,918	2,829	2,868	3,062	3,309	3,533	3,650	3,704	3,851	3,935	3,983	4,119	4,076	4,133	4,212	4,344	4,419	4,469	4,338	4,038	3,668	3,226
10/17/2023	2,942	2,785	2,675	2,644	2,703	2,963	3,349	3,594	3,587	3,555	3,493	3,661	3,570	3,543	3,584	3,780	3,982	4,183	4,292	4,465	4,333	3,990	3,605	3,174
10/18/2023	2,951	2,791	2,706	2,701	2,768	3,016	3,439	3,713	3,745	3,668	3,603	3,599	3,659	3,776	3,990	4,287	4,551	4,812	4,815	4,845	4,664	4,266	3,872	3,446
10/19/2023	3,113	2,935	2,801	2,762	2,820	3,006	3,413	3,717	3,751	3,788	3,864	3,984	4,169	4,471	4,746	5,071	5,423	5,511	5,379	5,389	5,140	4,605	4,152	3,666
10/20/2023	3,318	3,069	2,939	2,914	2,958	3,116	3,494	3,817	3,881	3,966	4,146	4,356	4,613	4,955	5,193	5,461	5,706	5,788	5,594	5,429	5,015	4,705	4,265	3,833
10/21/2023	3,555	3,344	3,206	3,109	3,041	3,088	3,201	3,319	3,603	3,952	4,258	4,545	4,959	5,399	5,707	6,027	6,179	6,135	5,879	5,492	5,083	4,715	4,313	3,862
10/22/2023	3,468	3,163	2,980	2,833	2,757	2,782	2,843	2,999	3,289	3,501	3,650	3,833	4,123	4,482	4,883	5,275	5,623	5,722	5,616	5,438	5,106	4,729	4,241	3,728
10/23/2023	3,357	3,097	2,951	2,876	2,877	3,148	3,495	3,766	3,857	3,950	4,195	4,404	4,793	5,198	5,644	6,056	6,472	6,553	6,237	6,098	5,633	5,266	4,732	4,013
10/24/2023	3,630	3,333	3,148	3,042	3,052	3,207	3,537	3,869	3,952	4,101	4,321	4,602	4,872	5,165	5,553	5,844	5,957	5,985	5,811	5,738	5,438	4,966	4,483	3,936

10/25/2023	3,570	3,315	3,143	3,062	3,070	3,250	3,594	3,845	3,930	4,079	4,322	4,634	4,934	5,172	5,349	5,667	5,889	5,910	5,868	5,776	5,520	5,069	4,589	4,049
10/26/2023	3,625	3,353	3,193	3,133	3,152	3,330	3,675	3,963	4,039	4,198	4,427	4,714	5,047	5,460	5,841	6,196	6,416	6,429	6,185	6,088	5,762	5,236	4,766	4,248
10/27/2023	3,813	3,505	3,289	3,232	3,199	3,350	3,665	3,851	4,029	4,271	4,514	4,836	5,243	5,697	6,022	6,322	6,469	6,409	6,111	5,764	5,321	4,952	4,601	4,143
10/28/2023	3,778	3,469	3,271	3,193	3,149	3,174	3,250	3,420	3,704	4,082	4,435	4,827	5,280	5,637	5,981	6,279	6,401	6,405	6,045	5,590	5,201	4,841	4,452	4,025
10/29/2023	3,726	3,435	3,263	3,108	3,077	3,079	3,155	3,286	3,550	3,948	4,339	4,706	5,146	5,520	5,986	6,377	6,650	6,623	6,317	6,094	5,715	5,139	4,650	4,075
10/30/2023	3,683	3,384	3,220	3,148	3,152	3,383	3,710	3,923	4,027	4,270	4,567	4,918	5,415	5,848	6,180	6,484	6,753	6,726	6,385	6,168	5,750	5,222	4,717	4,202
10/31/2023	3,798	3,529	3,330	3,209	3,205	3,410	3,735	4,006	4,085	4,174	4,417	4,712	5,124	5,532	5,937	6,326	6,635	6,635	6,111	5,707	5,346	5,079	4,648	4,216
11/1/2023	3,608	3,311	3,139	3,080	3,274	3,460	3,756	3,975	3,924	3,952	4,032	3,980	3,958	4,072	4,211	4,367	4,607	4,801	4,763	4,799	4,568	4,085	3,659	3,238
11/2/2023	3,007	2,845	2,767	2,730	2,750	3,011	3,551	3,964	4,060	3,884	3,772	3,704	3,754	3,801	3,923	4,166	4,460	4,685	4,774	4,854	4,718	4,337	3,871	3,384
11/3/2023	3,098	2,902	2,806	2,752	2,813	2,997	3,415	3,693	3,840	3,883	3,916	4,003	4,218	4,348	4,542	4,697	4,796	4,948	4,908	4,891	4,664	4,446	4,065	3,664
11/4/2023	3,304	3,065	2,923	2,852	2,855	2,869	2,981	3,143	3,395	3,703	3,908	3,954	4,076	4,262	4,361	4,618	4,842	4,919	4,818	4,760	4,521	4,267	3,935	3,514
11/5/2023	3,179	5,790	2,706	2,665	2,685	2,750	2,936	3,242	3,596	3,680	3,696	3,805	4,014	4,263	4,488	4,741	4,916	4,918	4,937	4,641	4,378	4,075	3,569	3,156
11/6/2023	2,902	2,765	2,708	2,694	2,803	3,153	3,717	3,968	3,841	3,782	3,824	3,957	4,182	4,437	4,714	4,943	5,190	5,264	5,328	5,086	4,776	4,417	3,841	3,342
11/7/2023	3,020	2,843	2,737	2,723	2,786	3,113	3,589	3,833	3,876	3,813	3,949	4,103	4,502	4,888	5,270	5,514	5,656	5,613	5,571	5,310	4,874	4,472	4,012	3,494
11/8/2023	3,296	3,035	2,873	2,854	3,050	3,326	3,751	3,948	3,962	4,049	4,244	4,522	4,828	5,111	5,433	5,743	5,877	5,768	5,704	5,385	5,088	4,728	4,256	3,703
11/9/2023	3,297	3,266	3,156	3,116	3,161	3,358	3,742	4,021	4,173	4,344	4,618	4,915	5,213	5,492	5,697	5,848	5,970	5,893	5,813	5,535	5,235	4,871	4,457	4,019
11/10/2023	3,745	3,503	3,416	3,375	3,395	3,540	3,809	4,055	4,374	4,744	5,166	5,591	5,966	6,292	6,617	6,701	6,640	6,400	6,160	5,859	5,535	5,232	4,874	4,473
11/11/2023	4,144	3,867	3,725	3,612	3,528	3,569	3,660	3,928	4,288	4,788	5,244	5,769	6,285	6,606	6,757	6,799	6,629	6,360	6,096	5,764	5,459	5,196	4,784	4,421
11/12/2023	4,125	3,832	3,689	3,593	3,490	3,499	3,588	3,828	4,266	4,630	4,916	5,224	5,465	5,567	5,653	5,715	5,700	5,674	5,611	5,375	5,114	4,742	4,350	3,914
11/13/2023	3,632	3,410	3,281	3,233	3,200	3,478	3,920	4,163	4,346	4,506	4,651	4,818	5,011	5,074	5,119	5,131	5,165	5,331	5,465	5,327	5,049	4,680	4,170	3,683
11/14/2023	3,553	3,328	3,228	3,153	3,239	3,479	3,889	4,175	4,385	4,535	4,689	4,816	4,868	4,883	4,887	4,877	5,004	5,239	5,344	5,187	4,976	4,649	4,295	3,863
11/15/2023	3,589	3,430	3,301	3,238	3,280	3,503	3,896	4,221	4,406	4,517	4,641	4,679	4,699	4,719	4,628	4,687	4,702	5,004	5,042	4,934	4,760	4,548	4,115	3,693
11/16/2023	3,369	3,258	3,078	2,990	3,152	3,402	3,825	4,146	4,391	4,529	4,586	4,677	4,713	4,706	4,664	4,655	4,774	4,880	5,036	4,926	4,732	4,478	4,069	3,729
11/17/2023	3,478	3,189	3,053	2,998	3,063	3,388	3,781	4,087	4,320	4,450	4,530	4,629	4,721	4,848	4,856	4,961	5,052	5,179	5,220	5,013	4,840	4,616	4,279	3,907
11/18/2023	3,709	3,410	3,143	3,024	2,987	3,070	3,188	3,448	3,789	4,165	4,410	4,581	4,780	4,920	5,128	5,253	5,249	5,160	5,049	4,817	4,593	4,355	4,056	3,726
11/19/2023	3,368	3,092	2,871	2,807	2,776	2,855	2,971	3,176	3,457	3,760	4,021	4,307	4,655	4,980	5,307	5,443	5,548	5,396	5,318	5,068	4,800	4,488	4,141	3,678
11/20/2023	3,252	2,950	2,865	2,838	2,878	3,169	3,584	3,821	3,949	4,048	4,273	4,572	4,973	5,330	5,645	5,902	5,925	5,857	5,875	5,544	5,131	4,840	4,453	3,988
11/21/2023	3,607	3,300	3,105	3,031	3,047	3,220	3,633	3,851	4,079	4,333	4,656	4,946	5,240	5,538	5,780	5,896	5,853	5,783	5,752	5,482	5,229	4,932	4,584	4,069
11/22/2023	3,628	3,426	3,265	3,183	3,215	3,373	3,632	3,845	4,178	4,532	4,898	5,089	5,345	5,361	5,278	5,200	5,041	5,106	5,101	4,882	4,687	4,386	4,061	3,639
11/23/2023	3,365	3,070	2,891	2,763	2,742	2,766	2,941	3,340	3,697	3,975	4,157	4,337	4,398	4,361	4,373	4,368	4,269	4,009	3,962	3,894	3,816	3,660	3,470	3,167
11/24/2023	2,914	2,754	2,636	2,595	2,628	2,755	2,946	3,194	3,484	3,717	4,058	3,959	3,894	3,876	3,803	3,813	3,879	4,053	4,151	4,045	3,907	3,721	3,513	3,246
11/25/2023	3,064	2,900	2,776	2,723	2,757	2,814	3,017	3,236	3,474	3,598	3,639	3,640	3,663	3,759	3,938	4,039	4,129	4,243	4,303	4,154	4,004	3,856	3,624	3,379
11/26/2023	3,122	2,905	2,767	2,711	2,745	2,775	2,904	3,117	3,481	3,804	4,005	4,131	4,251	4,297	4,388	4,469	4,567	4,706	4,902	4,797	4,665	4,374	4,008	3,610
11/27/2023	3,343	3,110	2,939	2,870	2,899	3,136	3,511	3,769	3,928	3,967	3,919	3,768	3,756	3,867	3,994	4,146	4,317	4,524	4,699	4,578	4,354	4,089	3,683	3,306
11/28/2023	3,069	2,913	2,863	2,882	2,964	3,271	3,867	4,231	4,343	4,182	4,263	4,279	4,290	4,359	4,396	4,354	4,577	4,994	5,419	5,441	5,395	5,195	4,824	4,480
11/29/2023	4,162	4,078	4,085	4,119	4,410	4,868	5,616	5,995	5,691	5,039	4,446	4,082	3,905	3,797	3,825	3,977	4,192	4,701	5,141	5,118	5,011	4,786	4,432	4,081
11/30/2023	3,866	3,790	3,783	3,870	4,158	4,607	5,249	5,463	5,156	4,506	4,084	3,895	3,843	3,887	3,924	4,012	4,209	4,466	4,697	4,575	4,401	4,142	3,796	3,442
12/1/2023	3,153	2,996	2,865	2,815	2,922	3,151	3,677	4,047	4,086	3,924	4,096	4,219	4,434	4,538	4,785	4,957	5,036	5,146	5,136	4,932	4,710	4,511	4,242	3,848
12/2/2023	3,525	3,254	3,083	3,036	3,036	3,138	3,304	3,579	3,956	4,300	4,669	4,991	5,303	5,456	5,668	5,763	5,780	5,759	5,609	5,298	5,051	4,843	4,531	4,099
12/3/2023	3,742	3,464	3,274	3,209	3,174	3,235	3,350	3,598	4,001	4,394	4,718	5,045	5,431	5,756	5,873	5,822	5,506	5,441	5,515	5,336	5,131	4,778	4,364	3,865
12/4/2023	3,487	3,269	3,115	3,049	3,089	3,303	3,718	4,085	4,370	4,591	4,751	4,938	5,037	5,209	5,266	5,291	5,210	5,300	5,344	5,143	4,771	4,414	4,017	3,541
12/5/2023	3,170	2,963	2,839	2,821	2,881	3,128	3,668	4,068	4,148	3,934	3,821	3,815	3,941	3,977	4,025	4,124	4,162	4,478	4,723	4,597	4,387	4,164	3,808	3,380
12/6/2023	3,106	2,948	2,893	2,908	3,027	3,314	3,781	4,117	4,041	3,888	3,774	3,670	3,647	3,643	3,739	3,895	4,182	4,563	4,949	5,000	4,961	4,841	4,408	4,004
12/7/2023	3,731	3,632	3,642	3,777	3,971	4,422	5,124	5,576	5,380	4,794	4,369	4,007	3,842	3,769	3,789	3,936	4,173	4,493	4,846	4,782	4,655	4,402	4,032	3,640
12/8/2023	3,358	3,196	3,113	3,100	3,204	3,533	3,994	4,376	4,444	4,189	4,046	3,976	3,948	3,969	4,072	4,198	4,342	4,520	4,598	4,416	4,252	4,090	3,831	3,483
12/9/2023	3,217	3,025	2,916	2,852	2,842	2,945	3,131	3,427	3,710	3,881	4,023	4,197	4,370	4,554	4,762	4,951	4,997	4,986	4,953	4,707	4,509	4,292	4,017	3,631
12/10/2023	3,338	3,096	2,958	2,829	2,833	2,878	2,980	3,221	3,536	3,835	4,091	4,356	4,696	4,950	5,106	5,126	4,981	5,074	5,082	4,844	4,553	4,276	3,910	3,439
12/11/2023	3,139	2,937	2,821	2,807	2,881	3,188	3,657	4,109	4,249	4,111	3,979	3,868	3,830	3,800	3,839	3,964	4,206	4,666	5,001	5,140	4,985	4,655	4,332	3,933
12/12/2023	3,716	3,618	3,611	3,647	3,826	4,233	4,980	5,353	5,193	4,824	4,332	4,064	3,904	3,841	3,875	4,024	4,233	4,642	4,894	4,765	4,601	4,335	3,952	3,570
12/13/2023	3,318	3,218	3,147	3,105	3,141	3,410	3,917	4,252	4,281	4,153	4,038	4,032	4,051	4,056	4,077	4,177	4,296	4,568	4,860	4,761	4,680	4,424	3,972	3,557
12/14/2023	3,238	3,075	2,956	2,938	3,036	3,284	3,742	4,085	4,147	4,183	4,099	4,042	4,053	4,157	4,095	4,107	4,226	4,479	4,679	4,601	4,513	4,272	3,937	3,504
12/15/2023	3,246	3,064	2,956	2,913	2,978	3,224	3,651	3,996	4,086	4,078	4,015	3,995	4,059	4,081	4,098	4,168	4,300	4,527	4,578	4,439	4,293	4,122	3,837	3,503
12/16/2023	3,261	3,114	2,982	2,919	2,929	3,011	3,161	3,448	3,784	4,068	4,248	4,314	4,385	4,403	4,395	4,352	4,435	4,599	4,595	4,456	4,267	4,124	3,890	3,539
12/17/2023	3,280	3,096	3,014	2,953	2,948	2,963	3,089	3,380	3,662	3,980	4,072	4,036	4,003	3,993	4,079	4,091	4,141	4,355	4,546	4,463	4,297	4,112	3,775	3,396
12/18/2023	3,125	2,934	2,841	2,842	2,940	3,191	3,634	4,069	4,135	4,005	3,859	3,785	3,769	3,802	3,857	3,978	4,191	4,512	5,016	4,960	4,799	4,502	4,136	3,725
12/19/2023	3,502	3,419	3,367	3,415	3,556	4,016	4,731	5,218	5,227	4,982	4,538	4,158	4,020	3,873	3,830	3,965	4,281	4,810	5,332	5,464	5,461	5,395	5,050	4,711
12/20/2023	4,301	4,159	4,116	4,227	4,458	5,027	5,619	5,936	5,705	5,241	4,723	4,430	4,264	4,194	4,163	4,227	4,423	4,814	4,990	5,002	4,877	4,562	4,245	3,874
12/21/2023	3,653	3,500	3,421	3,400	3,483	3,869	4,476	4,936	4,832	4,502	4,090	3,908	3,801	3,769	3,806	3,946	4,177	4,509	4,819	4,808	4,630	4,310	4,037	3,602
12/22/2023	3,389	3,268	3,176	3,198	3,277	3,522	3,988	4,298	4,435	4,483	4,397	4,231	4,132	4,156	4,055	4,027	4,154	4,356	4,485	4,403	4,273	4,162	3,933	3,611
12/23/2023	3,382	3,179	3,086	3,032	3,042	3,140	3,370	3,676	3,914	3,951	3,866	3,860	3,889	3,910	3,943	4,049	4,184	4,358	4,509	4,374	4,251	4,069	3,831	3,540
12/24/2023	3,341	3,111	2,942	2,870	2,891	2,978	3,116	3,442	3,802	4,009	4,147	4,220	4,253	4,295	4,311	4,306	4,324	4,445	4,442	4,272	4,107	3,946	3,742	3,456

12/25/2023	3,204	3,036	2,880	2,810	2,794	2,815	2,926	3,239	3,631	4,025	4,248	4,339	4,356	4,304	4,245	4,203	4,165	4,237	4,333	4,262	4,142	3,978	3,754	3,402
12/26/2023	3,125	2,922	2,794	2,741	2,765	2,892	3,099	3,422	3,691	3,937	4,130	4,261	4,252	4,272	4,252	4,352	4,474	4,642	4,819	4,664	4,430	4,219	3,898	3,501
12/27/2023	3,187	2,980	2,865	2,815	2,835	2,969	3,217	3,513	3,769	3,901	3,916	3,847	3,967	3,972	4,063	4,172	4,273	4,471	4,643	4,559	4,388	4,182	3,865	3,493
12/28/2023	3,257	3,041	2,930	2,895	2,906	3,092	3,397	3,758	4,078	4,297	4,471	4,489	4,374	4,151	4,066	4,084	4,153	4,389	4,655	4,594	4,477	4,283	4,010	3,691
12/29/2023	3,470	3,310	3,233	3,221	3,237	3,439	3,843	4,367	4,546	4,549	4,331	4,170	4,036	3,918	3,893	4,058	4,324	4,725	5,110	5,114	5,068	4,938	4,697	4,407
12/30/2023	4,154	4,038	3,967	3,910	3,935	4,126	4,527	4,866	5,130	5,154	4,873	4,462	4,230	4,141	4,029	4,002	4,180	4,515	4,919	4,947	4,938	4,890	4,743	4,511
12/31/2023	4,357	4,261	4,182	4,156	4,321	4,607	4,858	5,313	5,466	5,069	4,573	4,159	3,997	3,886	3,874	3,981	4,204	4,476	4,765	4,670	4,490	4,298	4,162	3,995

TYSP Year 2024
Staff's Data Request # 1
Question No. 5

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2023	1	7,840	0	7,840	16	8	51.043
	2	6,657	0	6,657	23	17	75.15
	3	7,608	0	7,608	27	18	77.93
	4	7,845	0	7,845	4	18	77.68
	5	8,354	0	8,354	11	17	80.62
	6	9,322	0	9,322	27	18	85
	7	9,725	0	9,725	21	17	87.03
	8	10,268	0	10,268	11	18	87.56
	9	9,281	0	9,281	11	18	83.71
	10	7,859	0	7,859	13	17	80.98
	11	6,799	0	6,799	11	16	75.53
	12	5,936	0	5,936	3	15	74.28
2022	1	9,240	0	9,240	30	8	45.1195
	2	7,539	0	7,539	1	8	57.8125
	3	7,003	0	7,003	18	18	73.6455
	4	7,905	0	7,905	6	18	79.3675
	5	8,743	0	8,743	23	17	81.55
	6	9,977	0	9,977	15	17	84.79
	7	9,799	0	9,799	29	17	83.9575
	8	9,848	0	9,848	1	17	84.1275
	9	9,306	0	9,306	6	17	84.167
	10	7,956	0	7,956	11	17	78.4835
	11	7,811	0	7,811	1	17	77.5835
	12	9,157	0	9,157	25	9	38.36
2021	1	7,052	0	7,052	19	8	45.2
	2	8,308	0	8,308	4	8	43.05
	3	7,565	0	7,565	31	17	86.25
	4	7,871	0	7,871	29	18	86.9
	5	8,735	0	8,735	5	18	87.5
	6	9,147	0	9,147	11	17	92.55
	7	9,452	0	9,452	22	17	89.7
	8	9,681	0	9,681	19	17	94.1
	9	8,770	0	8,770	13	17	87.55
	10	8,701	0	8,701	7	17	87.95
	11	6,198	0	6,198	3	17	81.4
	12	6,210	0	6,210	31	17	79
Notes							
(Include Notes Here)							

TYSP Year 2024
Staff's Data Request # 1
Question No. 20

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public DCFC PEV Charging Stations.	Cumulative Impact of PEVs		
				Summer Demand	Winter Demand	Annual Energy
				(MW)	(MW)	(GWh)
2024	68,488	1,905	543	14	0	50
2025	104,185	2,498	703	34	3	143
2026	157,228	3,246	896	63	8	286
2027	234,412	4,209	1,134	106	16	496
2028	339,524	5,395	1,411	164	28	792
2029	474,718	6,819	1,723	293	45	1,183
2030	636,557	8,450	2,058	331	67	1,663
2031	822,895	10,311	2,431	531	96	2,221
2032	1,029,188	12,397	2,848	669	131	2,846
2033	1,242,094	14,574	3,281	809	171	3,506

Notes

1. Source: Fall 2023 EV Forecast
2. "Number of PEVs" total cumulative PEV vehicles which includes includes Light, Medium, and Heavy Duty Vehicles.
3. "Cumulative Impact of PEVs" includes only net-new vehicles beginning January 2024 as used and provided to load forecasting. This includes energy impacts from light, medium, and heavy duty vehicles (energy is from 1/1/2024).
4. "Number of Public PEV charging stations" includes both L2 and DC charging stations
5."Cumulative Impact of PEV's at the system's coincident peak for Summer and Winter.

TYSP Year	2024
Staff's Data Request #	1
Question No.	27

[Demand Response Source or All Demand Response Sources]								
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	409,689	724	1,014	3,156	23	27	1,977	DNA	DNA
2015	410,855	752	1,055	6,372	29	35	1,375	DNA	DNA
2016	415,838	714	1,014	8,782	79	88	1,569	DNA	DNA
2017	424,246	756	1,065	9,592	34	43	2,559	DNA	DNA
2018	429,750	783	1,090	6,478	42	51	2,545	DNA	DNA
2019	432,277	786	1,098	6,862	69	76	2,058	DNA	DNA
2020	435,224	875	1,136	2,758	97	85	1,983	DNA	DNA
2021	435,102	908	1,161	1,613	9	10	2,709	DNA	DNA
2022	433,981	924	1,172	772	5	5	1,215	DNA	DNA
2023	431,462	911	1,157	2,922	29	31	828	2	2
Notes									
(Include Notes Here)									

Residential Load Management									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	409,227	355	654	3,145	3	7	1,976	2	4
2015	410,396	357	656	6,345	7	13	1,372	2	3
2016	415,369	366	669	8,634	10	19	1,300	1	6
2017	423,900	382	694	9,561	11	20	2,553	3	4
2018	429,403	388	698	6,424	7	13	2,542	3	4
2019	431,862	396	711	6,847	7	14	2,046	2	4
2020	434,807	394	671	2,735	3	6	1,980	2	4
2021	434,663	392	667	1,604	2	3	2,704	4	5
2022	433,563	390	665	767	1	1	1,181	2	2
2023	431,041	377	650	2,916	3	5	825	1	1
Notes									
A transition from CSS to SAP began Nov 1 2021. The residential transition is ongoing and many of the reports have not been completed Beginning year 2023 customers = SAP/HANA report for participants Jan 1, 2023 - Jan 31, 2023 Capacity at generator based on participant counts									

Commercial Load Management									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	65	4	0	0	0	0	0	2	0
2015	64	4	0	0	0	0	1	0	0
2016	63	4	0	0	0	0	0	0	0
2017	63	4	0	0	0	0	0	0	0
2018	63	4	0	0	0	0	0	0	0
2019	63	4	0	0	0	0	0	0	0
2020	63	4	0	0	0	0	0	0	0
2021	63	4	0	0	0	0	4	0	0
2022	59	4	0	0	0	0	1	0	0
2023	59	4	0	0	0	0	0	0	0
Notes									
The program closed to new participants in 2000 and several participants have closed their accounts.									

Standby Generation									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	259	103	104	10	5	5	1	DNA	DNA
2015	260	108	109	25	20	20	2	DNA	DNA
2016	269	68	68	147	68	68	269	DNA	DNA
2017	145	77	77	28	7	7	5	DNA	DNA
2018	147	82	82	12	3	3	1	DNA	DNA
2019	178	83	83	1	0	0	3	DNA	DNA
2020	175	80	80	5	2	0	1	DNA	DNA
2021	179	81	80	5	2	2	3	1	1
2022	183	83	82	3	1	1	0	0	0
2023	186	83	82	4	3	3	3	1	1
Notes									
See note below									

Interruptible Service									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	134	256	249	1	15	15	0	DNA	DNA
2015	131	277	283	2	3	3	1	DNA	DNA
2016	133	270	270	1	1	1	0	DNA	DNA
2017	134	287	287	3	16	16	1	DNA	DNA
2018	133	303	303	42	32	34	2	DNA	DNA
2019	170	297	297	14	62	62	5	DNA	DNA
2020	175	389	376	18	92	79	1	DNA	DNA
2021	193	395	381	4	6	6	2	2	2
2022	172	398	384	2	3	3	34	4.8	4.8
2023	172	398	384	1	22	22	0	0	0
Notes									
34 accounts no longer qualified for Interruptible Service beginning Jan 1 2022 and were removed from the program.									

Curtailable Service									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2014	4	6	7	0	0	0	0	DNA	DNA
2015	4	6	7	0	0	0	0	DNA	DNA
2016	4	6	7	0	0	0	0	DNA	DNA
2017	4	6	7	0	0	0	0	DNA	DNA
2018	4	6	7	0	0	0	0	DNA	DNA
2019	4	6	7	0	0	0	0	DNA	DNA
2020	4	8	9	0	0	0	0	DNA	DNA
2021	4	36	33	0	0	0	0	DNA	DNA
2022	4	49	41	0	0	0	0	DNA	DNA
2023	4	49	41	1	1	1	0	0	0
Notes									
As shown it was discovered in 2020 that one large account was not included in the CSS reports. The increase in reported MW is due to that.									

Table Footnotes:

(1) Total available capacity may change as a result of multiple factors including changes in participation, changes in contribution from existing participants, and periodic evaluation of system response. Thus, changes in total available capacity do not directly correlate to changes in participation.

(2) Added capacity corresponds to the addition of new participants and those converted from suspended accounts.

(3) Data is Not Available (DNA) on lost capacity for certain source programs and therefore is listed as DNA in their specific table and for the aggregated ALL Source Table.

(4) Nov 1 2021, the customer accounting system CSS was moved to Customer Connect (SAP)

(5) The transtion has resulted in reporting errors affecting all programs, especially residential DR reporting

(6) The Interruptible Tariff was revised January 1 2022 resulting in 34 participants no longer qualifying for the program

(7) In 2021 it was discovered that a large Curtailable customer load was not being reported and corrected acoounting for additional reported load.

(8) The Commerical Load Management program was closed to new participants in 2000 and participation is slowly diminishing

(9) During 2016 the Emergency Stand-by Tariff was closed and the customers were removed from the program. The Standby Generation Tariff was modified and the program renewed as non-Emergency Standby Tariff.

TYSP Year 2024
Staff's Data Request # 1
Question No. 28

[Demand Response Source or All Demand Response Sources]										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		MW	Number of Customers	MW	Number of Customers		MW	Number of Customers	MW	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	1	48	174	79	180
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions										

Residential Load Management										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions.										

Commercial Load Management										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	*	*	*	*	*	*	*	*	*	*
2015	*	*	*	*	*	*	*	*	*	*
2016	*	*	*	*	*	*	*	*	*	*
2017	*	*	*	*	*	*	*	*	*	*
2018	*	*	*	*	*	*	*	*	*	*
2019	*	*	*	*	*	*	*	*	*	*
2020	*	*	*	*	*	*	*	*	*	*
2021	*	*	*	*	*	*	*	*	*	*
2022	*	*	*	*	*	*	*	*	*	*
2023	*	*	*	*	*	*	*	*	*	*
Notes										
Commercial Demand Response is included in Residential Table Above										

Standby Generation										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	1	48	174	79	180
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
The last reported event was on 12/18/2020 which involved Standby Generation and Water Heaters for approximately an hour. It was difficult to separate residential and SBG contributions										

Interruptible Service										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
(Include Notes Here)										

Curtailable Service										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		(MW)	Number of Customers	(MW)	Number of Customers		(MW)	Number of Customers	(MW)	Number of Customers
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	0
Notes										
(Include Notes Here)										

TYSP Year 2024
Staff's Data Request # 1
Question No. 29

[Demand Response Source or All Demand Response Sources]							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	409,689	N	0	0	N	0	0
2015	410,855	N	0	0	N	0	0
2016	415,839	N	0	0	N	0	0
2017	424,246	N	0	0	N	0	0
2018	429,750	N	0	0	N	0	0
2019	432,277	N	0	0	N	0	0
2020	435,224	N	0	0	N	0	0
2021	435,102	N	0	0	N	0	0
2022	433,981	N	0	0	N	0	0
2023	432,208	N	0	0	N	0	0
Notes							
No events occurred							

Residential Load Management							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	409,227	N	0	0	N	0	0
2015	410,396	N	0	0	N	0	0
2016	415,369	N	0	0	N	0	0
2017	423,900	N	0	0	N	0	0
2018	429,403	N	0	0	N	0	0
2019	431,862	N	0	0	N	0	0
2020	434,807	N	0	0	N	0	0
2021	434,663	N	0	0	N	0	0
2022	433,563	N	0	0	N	0	0
2023	431,784	N	0	0	N	0	0
Notes							
From SAP/HANA report for average participants 2023							

Commercial Load Management							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	65	*	*	*	*	*	*
2015	64	*	*	*	*	*	*
2016	64	*	*	*	*	*	*
2017	63	*	*	*	*	*	*
2018	63	*	*	*	*	*	*
2019	63	*	*	*	*	*	*
2020	63	*	*	*	*	*	*
2021	63	*	*	*	*	*	*
2022	59	*	*	*	*	4	*
2023	59	*	*	*	*	*	*
Notes							
* Commercial Demand Response is included in Residential Table above							

Standby Generation							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	259	N	0	0	N	0	0
2015	260	N	0	0	N	0	0
2016	269	N	0	0	N	0	0
2017	145	N	0	0	N	0	0
2018	147	N	0	0	N	0	0
2019	178	N	0	0	N	0	0
2020	175	N	0	0	N	0	0
2021	179	N	0	0	N	0	0
2022	183	N	0	0	N	0	0
2023	187	N	0	0	N	0	0
Notes							
(Include Notes Here)							

Interruptible Service							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	134	N	0	0	N	0	0
2015	131	N	0	0	N	0	0
2016	133	N	0	0	N	0	0
2017	134	N	0	0	N	0	0
2018	133	N	0	0	N	0	0
2019	170	N	0	0	N	0	0
2020	175	N	0	0	N	0	0
2021	193	N	0	0	N	0	0
2022	172	N	0	0	N	0	0
2023	173	N	0	0	N	0	0
Notes							
(Include Notes Here)							

Curtailable Service							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)	Activated During Peak? (Y/N)	Number of Customers Activated	Capacity Activated (MW)
2014	4	N	0	0	N	0	0
2015	4	N	0	0	N	0	0
2016	4	N	0	0	N	0	0
2017	4	N	0	0	N	0	0
2018	4	N	0	0	N	0	0
2019	4	N	0	0	N	0	0
2020	4	N	0	0	N	0	0
2021	4	N	0	0	N	0	0
2022	4	N	0	0	N	0	0
2023	5	N	0	0	N	0	0
Notes							
(Include Notes Here)							

TYSP Year	2024
Staff's Data Request #	1
Question No.	30

Loss of Load Probability, Reserve Margin, and Expected Unserved Energy
Base Case Load Forecast

Year	Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2024	Duke Energy Florida is required to maintain a 20% Reserve Margin, therefore no LOLP study was conducted					
2025						
2026						
2027						
2028						
2029						
2030						
2031						
2032						
2033						

TYSP Year	2024
Staff's Data Request #	1
Question No.	31

Existing Generating Unit Operating Performance

Plant Name	Unit No.	Planned Outage Factor (POF) Historical	Planned Outage Factor (POF) Projected	Forced Outage Factor (FOF) Historical	Forced Outage Factor (FOF) Projected	Equivalent Availability Factor (EAF) Historical	Equivalent Availability Factor (EAF) Projected	Average Net Operating Heat Rate (ANOHR) Historical	Average Net Operating Heat Rate (ANOHR) Projected
ANCLOTE	1	12.12	12.12	2.08	2.08	74.36	74.36	11,430	11,430
	2	8.91	8.91	5.89	5.89	72.73	72.73	12,011	12,011
BARTOW	P1	5.87	5.87	26.95	26.95	53.13	53.13	15,040	15,040
	P2	7.15	7.15	4.02	4.02	68.94	68.94	15,771	15,771
	P3	6.13	6.13	31.23	31.23	52.26	52.26	16,665	16,665
	P4	6.62	6.62	7.04	7.04	67.06	67.06	14,932	14,932
BARTOW CC	4A	9.27	9.27	9.91	9.91	71.43	71.43	11,603	11,603
	4B	5.93	5.93	4.05	4.05	75.78	75.78	11,501	11,501
	4C	2.87	2.87	20.25	20.25	71.76	71.76	11,631	11,631
	4D	10.26	10.26	1.46	1.46	81.01	81.01	11,526	11,526
	4S	10.32	10.32	1.49	1.49	78.45	78.45	701	701
BAYBORO	P1	2.72	2.72	6.24	6.24	77.10	77.10	13,581	13,581
	P2	4.63	4.63	9.61	9.61	63.37	63.37	12,095	12,095
	P3	2.70	2.70	7.48	7.48	75.10	75.10	11,958	11,958
	P4	1.24	1.24	11.42	11.42	67.08	67.08	11,808	11,808
CITRUS CC	1A	9.51	9.51	3.53	3.53	77.34	77.34	10,524	10,524
	1B	9.50	9.50	0.95	0.95	78.41	78.41	10,558	10,558
	1S	8.81	8.81	1.09	1.09	84.84	84.84	770	770
	2A	10.31	10.31	0.77	0.77	78.20	78.20	10,452	10,452
	2B	10.13	10.13	1.88	1.88	77.80	77.80	10,511	10,511
	2S	7.99	7.99	0.64	0.64	86.05	86.05	691	691
CRYSTAL RIVER	4	5.59	5.59	10.63	10.63	74.09	74.09	11,068	11,068
	5	5.55	5.55	1.62	1.62	80.07	80.07	10,757	10,757
DEBARY	P2	3.92	3.92	1.85	1.85	71.44	71.44	15,150	15,150
	P3	0.15	0.15	5.79	5.79	66.05	66.05	14,906	14,906
	P4	3.44	3.44	4.73	4.73	69.33	69.33	16,118	16,118
	P5	0.03	0.03	10.16	10.16	61.92	61.92	14,934	14,934
	P6	3.63	3.63	14.60	14.60	61.38	61.38	14,638	14,638
	P7	3.37	3.37	2.81	2.81	77.68	77.68	14,051	14,051
	P8	3.70	3.70	20.06	20.06	61.08	61.08	13,277	13,277
	P9	0.08	0.08	8.53	8.53	45.52	45.52	14,041	14,041
	P10	6.62	6.62	3.77	3.77	46.47	46.47	14,030	14,030
HINES	1A	14.17	14.17	3.28	3.28	77.51	77.51	11,427	11,427
	1B	13.54	13.54	4.16	4.16	78.70	78.70	11,570	11,570
	1S	13.48	13.48	1.56	1.56	80.55	80.55	-	-
	2A	12.77	12.77	1.70	1.70	83.85	83.85	11,874	11,874
	2B	12.73	12.73	1.27	1.27	82.46	82.46	11,908	11,908
	2S	12.57	12.57	1.04	1.04	78.11	78.11	-	-
	3A	17.91	17.91	3.08	3.08	71.35	71.35	11,513	11,513
	3B	17.50	17.50	2.18	2.18	74.04	74.04	11,336	11,336
	3S	17.48	17.48	1.61	1.61	75.79	75.79	-	-
	4A	4.39	4.39	1.75	1.75	89.97	89.97	11,220	11,220
	4B	4.35	4.35	11.83	11.83	80.34	80.34	11,294	11,294
	4S	4.08	4.08	1.13	1.13	84.91	84.91	-	-
INTERCESSION CITY	P1	7.98	7.98	0.00	0.00	72.48	72.48	14,365	14,365
	P2	11.14	11.14	0.23	0.23	67.29	67.29	14,538	14,538
	P3	5.70	5.70	1.05	1.05	66.66	66.66	15,475	15,475
	P4	5.17	5.17	1.00	1.00	54.97	54.97	14,887	14,887
	P5	7.29	7.29	2.18	2.18	74.54	74.54	14,316	14,316
	P6	7.51	7.51	2.73	2.73	72.10	72.10	14,296	14,296
	P7	2.38	2.38	0.80	0.80	72.35	72.35	13,571	13,571
	P8	8.71	8.71	2.13	2.13	59.78	59.78	14,127	14,127
	P9	15.59	15.59	0.79	0.79	52.69	52.69	13,642	13,642
	P10	11.10	11.10	0.46	0.46	49.86	49.86	14,061	14,061
	P11	1.95	1.95	11.07	11.07	72.77	72.77	12,596	12,596
	P12	11.80	11.80	0.80	0.80	73.52	73.52	13,348	13,348
	P13	5.82	5.82	0.62	0.62	77.58	77.58	13,591	13,591
	P14	10.43	10.43	0.44	0.44	74.48	74.48	13,823	13,823
OSPREY	1A	16.62	16.62	2.37	2.37	72.52	72.52	11,915	11,915
	1B	17.99	17.99	3.17	3.17	70.26	70.26	11,935	11,935
	1S	16.65	16.65	0.56	0.56	67.12	67.12	772	772
SUWANNEE	P1	3.24	3.24	4.20	4.20	53.42	53.42	14,485	14,485
	P2	7.28	7.28	0.09	0.09	55.65	55.65	14,094	14,094
	P3	5.02	5.02	1.06	1.06	67.21	67.21	14,058	14,058
TIGER BAY	1A	2.84	2.84	4.91	4.91	79.94	79.94	11,964	11,964
	1S	2.86	2.86	5.05	5.05	84.22	84.22	-	-
UNIV. OF FLA.	P1	9.80	9.80	0.93	0.93	81.89	81.89	8,302	8,302

NOTE: Historical - average of past three years (2021,2022, 2023)
Projected - average of past three years (2021,2022, 2023)

TYSP Year 2024
Staff's Data Request # 1
Question No. 32

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
ANCLOTE	1	PASCO	ST	NG	October	1974	522	534	508	521	508	521	17.7
ANCLOTE	2	PASCO	ST	NG	October	1978	520	527	505	514	505	514	20.6
CRYSTAL RIVER	4	CITRUS	ST	BIT	December	1982	769	778	712	721	712	721	30.4
CRYSTAL RIVER	5	CITRUS	ST	BIT	October	1984	755	778	698	721	698	721	30.3
P L BARTOW	4	PINELLAS	CC	NG	June	2009	1132	1279	1,112	1,259	1,112	1,259	59.4
CITRUS COUNTY COMBINED CYCLE	PB1	CITRUS	CC	NG	October	2018	825	943	807	925	807	925	74.4
CITRUS COUNTY COMBINED CYCLE	PB2	CITRUS	CC	NG	November	2018	821	947	803	929	803	929	76.5
HINES ENERGY COMPLEX	1	POLK	CC	NG	April	1999	508	528	501	521	501	521	50.5
HINES ENERGY COMPLEX	2	POLK	CC	NG	December	2003	540	557	532	549	532	549	52.2
HINES ENERGY COMPLEX	3	POLK	CC	NG	November	2005	531	543	523	535	523	535	55.1
HINES ENERGY COMPLEX	4	POLK	CC	NG	December	2007	533	552	525	544	525	544	72.6
OSPREY ENERGY CENTER POWER PLANT	1	POLK	CC	NG	May	2004	608	638	596	626	245	245	39.5
TIGER BAY	1	POLK	CC	NG	August	1997	202	233	199	230	199	230	55.9
BARTOW	P1	PINELLAS	GT	DFO	May	1972	41	50	41	50	41	50	0.1
BARTOW	P2	PINELLAS	GT	NG	June	1972	41	53	41	53	41	53	1.8
BARTOW	P3	PINELLAS	GT	DFO	June	1972	41	51	41	51	41	51	0.0
BARTOW	P4	PINELLAS	GT	NG	June	1972	45	58	45	58	45	58	1.9
BAYBORO	P1	PINELLAS	GT	DFO	April	1973	44	58	44	58	44	58	0.3
BAYBORO	P2	PINELLAS	GT	DFO	April	1973	21	27	21	27	21	27	0.3
BAYBORO	P3	PINELLAS	GT	DFO	April	1973	43	57	43	57	43	57	0.2
BAYBORO	P4	PINELLAS	GT	DFO	April	1973	43	56	43	56	43	56	0.1
DEBARY	P2	VOLUSIA	GT	DFO	December	1975	45	57	45	57	45	57	0.1
DEBARY	P3	VOLUSIA	GT	DFO	December	1975	45	59	45	59	45	59	0.2
DEBARY	P4	VOLUSIA	GT	DFO	December	1975	46	59	46	59	46	59	0.1
DEBARY	P5	VOLUSIA	GT	DFO	December	1975	45	58	45	58	45	58	0.1
DEBARY	P6	VOLUSIA	GT	DFO	December	1975	46	59	46	59	46	59	0.1
DEBARY	P7	VOLUSIA	GT	NG	October	1992	74	93	74	93	74	93	4.7
DEBARY	P8	VOLUSIA	GT	NG	October	1992	75	94	75	94	75	94	3.6
DEBARY	P9	VOLUSIA	GT	NG	October	1992	76	94	76	94	76	94	3.6
DEBARY	P10	VOLUSIA	GT	DFO	October	1992	72	88	72	88	72	88	0.2
INTERCESSION CITY	P1	OSCEOLA	GT	DFO	May	1974	45	61	45	61	45	61	0.3
INTERCESSION CITY	P2	OSCEOLA	GT	DFO	May	1974	46	60	46	60	46	60	0.2
INTERCESSION CITY	P3	OSCEOLA	GT	DFO	May	1974	46	61	46	61	46	61	0.1
INTERCESSION CITY	P4	OSCEOLA	GT	DFO	May	1974	46	62	46	62	46	62	0.2
INTERCESSION CITY	P5	OSCEOLA	GT	DFO	May	1974	45	59	45	59	45	59	0.3
INTERCESSION CITY	P6	OSCEOLA	GT	DFO	May	1974	47	60	47	60	47	60	0.1
INTERCESSION CITY	P7	OSCEOLA	GT	NG	October	1993	78	90	78	90	78	90	3.3
INTERCESSION CITY	P8	OSCEOLA	GT	NG	October	1993	77	88	77	88	77	88	3.1
INTERCESSION CITY	P9	OSCEOLA	GT	NG	October	1993	77	88	77	88	77	88	1.6
INTERCESSION CITY	P10	OSCEOLA	GT	NG	October	1993	74	86	74	86	74	86	3.6
INTERCESSION CITY	P11	OSCEOLA	GT	DFO	January	1997	140	161	140	161	140	161	0.4
INTERCESSION CITY	P12	OSCEOLA	GT	NG	December	2000	73	89	73	89	73	89	9.0
INTERCESSION CITY	P13	OSCEOLA	GT	NG	December	2000	73	91	73	91	73	91	8.0
INTERCESSION CITY	P14	OSCEOLA	GT	NG	December	2000	73	90	73	90	73	90	3.3
SUWANNEE RIVER	P1	SUWANNEE	GT	NG	October	1980	48	65	48	65	48	65	2.6
SUWANNEE RIVER	P2	SUWANNEE	GT	DFO	October	1980	48	64	48	64	48	64	0.5
SUWANNEE RIVER	P3	SUWANNEE	GT	NG	November	1980	49	65	49	65	49	65	4.0
UNIVERSITY OF FLORIDA	P1	ALACHUA	GT	NG	January	1994	44	50	44	50	44	50	86.1
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 33

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Undesignated CT	P1	Unknown	GT	NG	June	2032	215	235	215	235	215	235	1.93
Undesignated CT	P2	Unknown	GT	NG	June	2032	215	235	215	235	215	235	1.93
Undesignated CT	P3	Unknown	GT	NG	June	2033	215	235	215	235	215	235	1.93
Undesignated CT	P4	Unknown	GT	NG	June	2033	215	235	215	235	215	235	1.93
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 34

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Econolockhatchee Photovoltaic Array	1	Volusia	PV	SO	1	1989	0.007	0.007	0.007	0.007	0	0	15.6
Osceola	1	Osceola	PV	SO	5	2016	3.8	3.8	3.8	3.8	1.7	0	11.0
Perry	1	Taylor	PV	SO	7	2016	5.1	5.1	5.1	5.1	2.3	0	16.0
Suwannee	1	Suwannee	PV	SO	12	2017	8.8	8.8	8.8	8.8	4.0	0	21.0
Hamilton	1	Hamilton	PV	SO	12	2018	74.9	74.9	74.9	74.9	42.7	0	25.0
Lake Placid	1	Highlands	PV	SO	12	2019	45.0	45.0	45.0	45.0	25.7	0	16.0
Trenton	1	Gilchrist	PV	SO	12	2019	74.9	74.9	74.9	74.9	42.7	0	21.0
St. Petersburg Pier	1	Pinellas	PV	SO	12	2019	0.35	0.35	0.35	0.35	0.2	0	18.0
Columbia	1	Columbia	PV	SO	3	2020	74.9	74.9	74.9	74.9	42.7	0	22.0
DeBary	1	Volusia	PV	SO	5	2020	74.5	74.5	74.5	74.5	33.5	0	19.0
Sante Fe	1	Columbia	PV	SO	3	2021	74.9	74.9	74.9	74.9	42.7	0	21.0
Twin Rivers	1	Hamilton	PV	SO	3	2021	74.9	74.9	74.9	74.9	42.7	0	22.0
Duette	1	Manatee	PV	SO	10	2021	74.5	74.5	74.5	74.5	42.5	0	22.0
Sandy Creek	1	Bay	PV	SO	5	2022	74.9	74.9	74.9	74.9	42.5	0	24.0
Ft Green	1	Hardee	PV	SO	6	2022	74.9	74.9	74.9	74.9	33.5	0	19.0
Charlie Creek	1	Hardee	PV	SO	8	2022	74.9	74.9	74.9	74.9	42.7	0	25.0
Bay Trail	1	Citrus	PV	SO	9	2022	74.9	74.9	74.9	74.9	42.7	0	21.0
Dolphin Solar	1	Pinellas	PV	SO	8	2022	0.25	0.25	0.25	0.25	0	0	26.0
Hildreth	1	Suwannee	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	26.0
High Springs	1	Alachua	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	21.0
Hardeetown	1	Levy	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	25.0
Bay Ranch	1	Bay	PV	SO	4	2023	74.9	74.9	74.9	74.9	42.7	0	27.0
John Hopkins	1	Pinellas	PV	SO	11	2023	0.75	0.75	0.75	0.75	0.75	0	11.0
Hines Floating Solar	1	Polk	PV	SO	11	2023	0.75	0.75	0.75	0.75	0.75	0	9.0
Notes													
**Solar CFs are from: Schedule A-4s or DEF's year-end Solar Plant Operation Status Report filed as requested under docket #20240007.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 35

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Mule Creek	1	Bay	PV	SO	3	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Winquepin	1	Madison	PV	SO	3	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Falmouth	1	Suwannee	PV	SO	8	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
County Line	1	Gilchrist	PV	SO	10	2024	74.9	74.9	74.9	74.9	42.7	0	~28%
Sundance	1	Madison	PV	SO	3	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Bailey Mill	1	Jefferson	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Half Moon	1	Sumter	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Rattler	1	Hernando	PV	SO	12	2025	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #33	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #34	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #35	1	Unknown	PV	SO	6	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #36	1	Unknown	PV	SO	12	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #37	1	Unknown	PV	SO	12	2026	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #38	1	Unknown	BA	N/A	3	2027	100	100	100	100	90	90	~10%
Renewable Energy Center #39	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #40	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #41	1	Unknown	PV	SO	6	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #42	1	Unknown	PV	SO	12	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #43	1	Unknown	PV	SO	12	2027	74.9	74.9	74.9	74.9	18.7	0	~27%
Renewable Energy Center #44	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #45	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #46	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #47	1	Unknown	PV	SO	7	2028	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #48	1	Unknown	SPS	SO	7	2028	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #49	1	Unknown	SPS	SO	7	2028	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #50	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #51	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #52	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #53	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #54	1	Unknown	PV	SO	7	2029	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #55	1	Unknown	SPS	SO	7	2029	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #56	1	Unknown	SPS	SO	7	2029	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #57	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #58	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #59	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #60	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #61	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #62	1	Unknown	PV	SO	7	2030	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #63	1	Unknown	SPS	SO	7	2030	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #64	1	Unknown	SPS	SO	7	2030	74.9	74.9	74.9	74.9	27.5	36	~34%
Renewable Energy Center #65	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #66	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #67	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #68	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #69	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #70	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #71	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #72	1	Unknown	PV	SO	7	2031	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #73	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #74	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #75	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #76	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #77	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #78	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #79	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #80	1	Unknown	PV	SO	7	2032	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #81	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #82	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #83	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #84	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #85	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #86	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #87	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%
Renewable Energy Center #88	1	Unknown	PV	SO	7	2033	74.9	74.9	74.9	74.9	7.5	0	~27%

Notes

Mule Creek and Winquepin were placed into service in March 2023. Falmouth and County Line are under constrcution and are expected to be in service Q3-2024 and Q4- 2024, respectively. The rest of the units are still in the development or planning stages. *DEF modeling derives an equivalent summer non-coincident, but on-peak-hour capacity value equal to 25% of the facility's nameplate rating for planned PV installations from 2025 to 2027 and 10% for 2028 and beyond.

TYSP Year 2024
Staff's Data Request # 1
Question No. 37

Year		As-Available Energy ($/MWh)	On-Peak Average ($/MWh)	Off-Peak Average ($/MWh)
Actual	**2014**	37.68	42.97	33.21
	2015	26.03	28.74	23.74
	2016	25.97	29.79	22.73
	2017	28.97	32.44	26.03
	2018	30.84	34.80	27.49
	2019	23.71	27.22	20.73
	2020	18.57	21.22	16.33
	2021	34.45	40.53	29.30
	2022	61.67	73.74	51.45
	2023	24.47	28.56	21.00
Projected	**2024**	28.05	31.06	25.51
	2025	31.59	34.70	28.96
	2026	30.80	33.33	28.66
	2027	29.38	31.46	27.61
	2028	28.82	30.14	27.70
	2029	28.96	30.61	27.56
	2030	28.85	30.27	27.65
	2031	29.14	30.65	27.86
	2032	28.51	30.30	27.00
	2033	29.38	31.54	27.55
Notes				
(Include Notes Here)				

TYSP Year	2024
Staff's Data Request #	1
Question No.	38

Generating Unit Name	**Summer Capacity (MW)**	**Certification Dates (if Applicable)**		**In-Service Date (MM/YY)**
		Need Approved (Commission)	**PPSA Certified**	
Nuclear Unit Additions				
Combustion Turbine Unit Additions				
Undesignated CT	**215**	**Not Required**	**Not Required**	**6/1/2032**
Undesignated CT	**215**	**Not Required**	**Not Required**	**6/1/2032**
Undesignated CT	**215**	**Not Required**	**Not Required**	**6/1/2033**
Undesignated CT	**215**	**Not Required**	**Not Required**	**6/1/2033**
Combined Cycle Unit Additions				
Steam Turbine Unit Additions				
Notes				
(Include Notes Here)				

TYSP Year 2024
Staff's Data Request # 1
Question No. 40

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Anclote	1~2	Steam	Gas	19.2	14.9	13.4	10.6	8.3	10.5	12.7	10.2	11.1	11.5	11.2
Crystal River	4~5	Steam	Coal	30.3	17.2	15.4	13.1	12.3	10.9	11.2	12.6	12.9	12.1	15.0
Bartow CC	4	Combined Cycle	Gas	59.4	57.0	66.5	62.2	59.2	60.2	60.8	60.2	59.0	57.3	54.3
Citrus CC	1~2	Combined Cycle	Gas	75.5	83.6	81.8	79.3	84.7	80.1	79.3	77.9	69.9	73.4	71.5
Hines Energy Complex	1~4	Combined Cycle	Gas	57.6	68.1	65.3	64.7	61.0	60.8	57.2	56.9	54.8	51.2	50.1
Osprey CC	1	Combined Cycle	Gas	39.5	42.0	39.0	45.2	38.8	39.8	41.0	40.7	39.2	37.6	38.3
Tiger Bay	1	Combined Cycle	Gas	55.9	53.9	43.6	42.8	40.0	40.6	36.7	30.5	33.4	27.5	28.2
Bartow Peaker	1~4	Gas Turbine	Gas/Oil	1.0	0.2	0.3	0.4	0.9	1.0	1.1	0.9	1.5	1.2	1.6
Bayboro	1~4	Gas Turbine	Oil	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DeBary	2~10	Gas Turbine	Gas/Oil	1.7	0.7	0.6	0.6	1.4	1.7	1.6	1.5	2.3	2.2	2.6
Intercession City	1~14	Gas Turbine	Gas/Oil	2.6	0.8	0.8	0.8	1.3	1.2	1.4	0.9	1.4	1.4	1.9
New CT	1~4	Gas Turbine	Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.7
Suwannee Peaker	1~3	Gas Turbine	Gas/Oil	2.4	1.7	1.8	1.6	1.8	2.0	2.3	2.0	2.5	2.3	2.9
University of Florida	1	Gas Turbine	Gas	86.1	84.4	84.3	82.9	82.7	84.1	84.3	75.5	83.9	83.9	81.9
Solar Bailey Mill	1	PV	SO	0.0	0.0	18.6	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Bay Ranch	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.3
Solar Bay Trail	1	PV	SO	20.8	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.2	21.6
Solar Charlie Creek	1	PV	SO	30.7	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	26.5	20.3
Solar Columbia	1	PV	SO	21.8	27.2	27.2	27.2	27.2	27.2	27.2	26.6	24.1	21.3	18.6
Solar County Line	1	PV	SO	0.0	23.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	27.9	27.6
Solar Debary	1	PV	SO	18.6	23.5	23.5	23.5	23.5	23.5	23.5	23.0	20.6	18.3	16.0
Solar Duette	1	PV	SO	21.9	27.2	27.2	27.2	27.2	27.2	27.2	27.2	25.5	22.9	20.5
Solar Falmouth	1	PV	SO	0.0	25.9	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	28.5
Solar Fort Green	1	PV	SO	18.6	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	27.7	21.9
Solar Half Moon	1	PV	SO	0.0	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Hamilton	1	PV	SO	24.6	27.2	27.2	27.2	27.2	27.2	27.2	26.9	24.6	21.7	19.3
Solar Hardeetown	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	26.4
Solar High Spring	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.5
Solar Hildreth	1	PV	SO		28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	26.5
Solar Lake Placid	1	PV	SO	16.0	27.1	27.1	27.1	27.0	27.0	27.0	26.8	24.8	22.5	20.5
Solar Mule Creek	1	PV	SO	0.0	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.4	28.5	28.5
Solar Osc Perry Suw	1	PV	SO	18.0	23.5	23.5	23.5	23.5	23.5	23.5	23.4	22.1	19.6	18.2
Solar Rattler	1	PV	SO	0.0	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Solar Sandy Creek	1	PV	SO	24.0	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	26.3	20.2
Solar Santa Fe	1	PV	SO	20.9	27.2	27.2	27.2	27.2	27.2	27.2	27.1	25.1	22.4	19.8
Solar St Pete Pier	1	PV	SO		23.5	23.5	23.5	23.5	23.5	23.5	23.2	21.1	18.9	17.1
Solar Sundance	1	PV	SO	0.0	0.0	28.9	27.8	27.8	27.8	27.8	27.8	27.6	27.8	27.8
Solar Trenton	1	PV	SO	21.5	27.2	27.2	27.2	27.2	27.2	27.2	27.0	24.8	22.2	19.5
Solar Twin Rivers	1	PV	SO	22.4	27.2	27.2	27.2	27.2	27.2	27.2	27.1	25.3	22.6	20.1
Solar Winquepin	1	PV	SO	0.0	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.3	28.5	28.5
Solar Generic	1~49	PV	SO	0.0	0.0	0.0	26.1	27.3	27.5	27.5	27.6	27.6	27.4	27.2
Solar plus Storage Generic	1~6	PV-Storage	SO	0.0	0.0	0.0	0.0	0.0	33.5	35.3	35.7	36.2	35.7	35.5
Battery 2 Hours	1~2	Storage	System	0.0	0.0	0.0	0.0	8.2	8.5	9.8	9.7	10.1	10.9	11.9

Notes

The "Battery 2 Hours" capacity factor values represent the battery generation (not offset by charging) compared to rated capacity.

TYSP Year	2024
Staff's Data Request #	1
Question No.	42

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Anclote	NG	508	10/74	CC	Project Development
Anclote	NG	505	10/78	CC	Project Development
Crystal River	BIT	712	12/82	CC/IGCC	Project Development
Crystal River	BIT	698	10/84	CC/IGCC	Project Development
Notes					
(Include Notes Here)					

TYSP Year	2024
Staff's Data Request #	1
Question No.	43

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Crystal River	BIT	712	12/82	CC/IGCC	Project Development
Crystal River	BIT	698	10/84	CC/IGCC	Project Development
Notes					
Notes					
(Include Notes Here)					

TYSP Year 2024
Staff's Data Request # 1
Question No. 44

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
N/A	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Notes

DEF has no proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act, nor are there any that have already been approved, but are not yet in-service.

TYSP Year	2024
Staff's Data Request #	1
Question No.	45

Nominal, Firm Purchases

	Firm Purchases	
Year	$/MWh	Escalation %
HISTORY:		
2021	156.92	
2022	179.25	14%
2023	190.00	6%
FORECAST:		
2024	227.51	
2025	208.36	-8%
2026	212.46	2%
2027	137.46	-35%
2028	38.25	-72%
2029	38.22	0%
2030	33.76	-12%
2031	35.71	6%
2032	36.17	1%
2033	36.86	2%

TYSP Year 2024
Staff's Data Request # 1
Question No. 46

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Northern Star Generation	Mulberry	1	Polk	CC	NG	115	115	115	115	115	115	12/1/1994	8/8/2024
Northern Star Generation	Orange Cogen	1	Polk	CC	NG	104	104	104	104	104	104	12/16/1995	12/31/2025
General Electric Financial Services	Shady Hills	1-3	Pasco	GT	NG	482	523	482	523	482	523	4/1/2007	4/30/2024
Northern Star Generation	Vandolah Power	1-4	Hardee	GT	NG	657	701	657	701	657	701	6/1/2012	5/31/2027
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 54

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Utility - Firm	2,165	3,255	3,714	4,587	5,476	6,611	7,855	9,278	10,640	11,858	12,810
Utility - Non-Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Purchase - Firm	617	531	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	7	25	71	161	226	313	379	464	530	616	676
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	1,044	1,494	1,853	2,228	2,618	2,952	3,169	3,397	3,638	3,891	4,120
Total	3,832	5,305	5,638	6,976	8,320	9,877	11,403	13,139	14,808	16,365	17,606
Notes											
(Include Notes Here)											

TYSP Year	2024
Staff's Data Request #	1
Question No.	47

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 48

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Pasco County	Pasco County Resource Recovery	ST	Pasco	ST	MSW	23	23	23	23	23	23	1/1/1995	12/31/2024
Pinellas County	Pinellas County Resource Recovery	ST	Pinellas	ST	MSW	55	55	55	55	55	55	1/1/1995	12/31/2024
As Available													
Lake County	Lake County Resource Recovery	ST	Lake	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	7/1/2014	N/A
Dade County	Metro-Dade County Resource Recovery	ST	Dade	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2014	N/A
Lee County	Lee County Resource Recovery	ST	Lee	ST	MSW	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2017	N/A
PCS Phosphate	Swift Creek	ST	Hamilton	ST	WH	N/A	N/A	N/A	N/A	N/A	N/A	1/1/1980	N/A
Notes													
(Include Notes Here)													

TYSP Year	2024
Staff's Data Request #	1
Question No.	49

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
As Available													
G2 Energy Marion	G2 Energy Marion	U1	Marion	ST	LNG	N/A	N/A	N/A	N/A	N/A	N/A	1/1/2024	N/A
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 51

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)		Description	Status (Expired / Modified / Same)
						Sum	Win	Sum	Win	Sum	Win	Start	End		
Seminole	N/A	N/A	N/A	N/A	Nat Gas	N/A	N/A	N/A	N/A	200-500	200-500	6/1/2016	12/31/2024	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0.014	0.014	6/1/1987	Evergreen	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0	50-600	1/1/2021	3/31/2027	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	50-400	50-400	1/1/2021	12/31/2030	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	50-400	50-400	1/1/2021	12/31/2035	Partial Reqs	Same
Seminole	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	250	0	6/1/2023	9/30/2023	Partial Reqs	Modified
Reedy Creek	N/A	N/A	N/A	N/A	Nat Gas	N/A	N/A	N/A	N/A	141	81	1/1/2016	12/31/2024	Partial Reqs	Modified
Tampa Electric	N/A	N/A	N/A	N/A	System	N/A	N/A	N/A	N/A	0-515	0-515	1/26/2019	11/30/2024	Partial Reqs	Modified

Notes

The Seminole agreements have optionality. The agreements with 50-400 MW listed have a combined maximum of 450 MW through 2030.

Tampa Electric was extended through November 2024

TYSP Year 2024
Staff's Data Request # 1
Question No. 52

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
(Include Notes Here)													

TYSP Year	2024
Staff's Data Request #	1
Question No.	63

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
USF Microgrid Energy Storage Pilot	Y	7/8/2018	0.25	0.48	88.0%
Trenton	Y	12/21/2021	11.00	15.60	83.2%
Lake Placid BESS	Y	12/9/2021	17.28	50.60	83.5%
Cape San Blas	Y	2/10/2022	5.50	20.50	83.5%
Jennings	Y	4/5/2022	5.50	8.50	84.0%
Duke / UCF Long-Duration Energy Storage Project	Y	7/27/2022	0.01	0.04	75.0%
Micanopy	Y	8/5/2022	8.25	18.20	83.5%
John Hopkins Microgrid	Y	11/13/2023	2.475	23.5	83.5%
Notes					
(Include Notes Here)					

TYSP Year	2024
Staff's Data Request #	1
Question No.	64

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Projected Max Capacity Output (MW)	Projected Max Energy Stored (MHh)	Projected Conversion Efficiency (%)
Suwannee LDES	Y	2/25/2024	5	40	0.75
Powerline BESS	N	3/1/2027	100	200	0.85
Vision Florida Residential Battery Pilot	Y	7/1/2024	0.362	0.972	0.85
Notes					
(Include Notes Here)					

TYSP Year 2024
Staff's Data Request # 1
Question No. 70

Year	Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (Present-Year $ millions)			
	Capital Costs	O&M Costs	Fuel Costs	Total Costs
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
2031	0	0	0	0
2032	0	0	0	0
2033	0	0	0	0
Notes				
(Include Notes Here)				

TYSP Year 2024
Staff's Data Request # 1
Question No. 72

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	Convert to NG	Convert to NG	Impacted	NA	NA
Anclote 2	Steam	NG	505							
P L Bartow	CC	NG	1,112	NA	NA	NA	Dispatch Changes	Impacted	NA	NA
Citrus Combined Cycle	CC	NG	1,610	NA	NA	NA	NA	Compliant as Constructed	NA	NA
Crystal River 4	Steam	Coal	712	Impacted	Impacted	Reagent, CEMS	FGD, SCR, Dispatch	Impacted	Impacted	NA
Crystal River 5	Steam	Coal	698							
Osprey	CC	NG	245	NA	NA	NA	NA	NA	NA	NA
Hines PB1-4	CC	NG	2,081	NA	NA	NA	Dispatch Changes	NA	NA	NA
Notes										
(Include Notes Here)										

TYSP Year 2024
Staff's Data Request # 1
Question No. 73

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR $ millions)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	0	0	15-130	NA	NA
Anclote 2	Steam	NG	505			0	0		NA	NA
P L Bartow	CC	NG	1112	NA	NA	0	0	20 - 50	NA	NA
Crystal River 4	Steam	Coal	712	TBD	TBD	0	0	1 - 3	TBD	0
Crystal River 5	Steam	Coal	698			0	0			
Notes										
(Include Notes Here)										

TYSP Year 2024
Staff's Data Request # 1
Question No. 74

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Anclote 1	Steam	NG	508	NA	NA	NA	NA	TBD	NA	NA
Anclote 2	Steam	NG	505	NA	NA	NA	NA	TBD	NA	NA
P L Bartow	CC	NG	1,112	NA	NA	NA	NA	TBD	NA	NA
Citrus Combined Cycle	CC	NG	1,610	NA	NA	NA	NA	NA	NA	NA
Crystal River 4	Steam	Coal	712	TBD	TBD	NA	NA	NA	TBD	NA
Crystal River 5	Steam	Coal	698	TBD	TBD	NA	NA	NA	TBD	NA
Osprey	CC	NG	245	NA	NA	NA	NA	NA	NA	NA
Hines 1-4	CC	NG	2,081	NA	NA	NA	NA	NA	NA	NA
Notes										
(Include Notes Here)										

TYSP Year 2024
Staff's Data Request # 1
Question No. 76

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil		Hydrogen	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2014	-	-	11,729	3.98	22,953	5.66	-	-	76	21.97	-	-
	2015	-	-	9,718	3.72	25,227	4.67	-	-	73	22.30	-	-
	2016	-	-	8,885	3.62	24,807	4.09	-	-	77	18.66	-	-
	2017	-	-	8,722	3.44	27,307	4.26	-	-	62	16.43	-	-
	2018	-	-	8,422	3.20	28,687	4.52	-	-	90	19.80	-	-
	2019	-	-	4,322	3.66	35,170	3.93	-	-	33	20.36	-	-
	2020	-	-	3,287	3.66	36,327	3.37	-	-	33	22.28	-	-
	2021	-	-	5,042	3.03	34,517	5.28	-	-	61	20.27	-	-
	2022	-	-	4,375	4.58	36,423	8.50	-	-	146	22.63	-	-
	2023	-	-	3,829	4.61	35,526	4.16	-	-	29	26.51	-	-
Projected	2024	-	-	2,157	3.37	36,625	3.59	-	-	7	21.01	-	-
	2025	-	-	1,920	3.86	37,314	4.17	-	-	5	19.75	-	-
	2026	-	-	1,639	3.99	37,194	4.22	-	-	2	18.89	-	-
	2027	-	-	1,539	3.98	36,537	4.19	-	-	6	17.51	-	-
	2028	-	-	1,370	4.07	36,197	4.17	-	-	17	17.55	-	-
	2029	-	-	1,395	3.96	35,521	4.15	-	-	11	17.95	-	-
	2030	-	-	1,569	3.93	34,714	4.20	-	-	7	18.30	-	-
	2031	-	-	1,617	4.16	33,083	4.33	-	-	10	18.61	-	-
	2032	-	-	1,519	4.40	32,668	4.56	-	-	11	19.03	-	-
	2033	-	-	1,873	4.47	31,801	4.82	-	-	10	19.40	-	-
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 95

Table I: Current Data Center Information										
Data Centers Currently Located in Utility Service Area										
						For each of the Data Center				
Total No. of Data Centers	Customer Class Served	Total Energy Usage in 2023	Impact to Summer Peak Demand	Impact to Winter Peak Demand	Seasonality Observed, if any		Type of Data Center*	Energy Used in 2023	Hours of Peak Usage**	Impact to Peak Demand
		(MWHs)	(MWs)	(MWs)				(MWHs)		(MWs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
3	B2B	48,000	14.5	7	N/A	1	cloud	11,000	10 18	2.5
						2	colocation	29,000	10 18	3.6
						3	colocation	8,000	1	1
						…				

* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.
** Based on military time 1 - 24.

Table II: Planned Data Center Information						
Planned Data Centers in Your Service Area						
	Type of Data Center*	Customer Class Served	Expected In-Service Data	Expected Annual Energy Usage	Expected Impact to Summer Peak Demand	Expected Impact to Winter Peak Demand
				(MWHs)	(MWs)	(MWs)
	(1)	(2)	(3)	(4)	(5)	(6)
1	Hybrid Cloud Solutions (Colocation & Cloud)	B2B	2Q 2024	8	5	4
2						
3						
…						

* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.

DUKE ENERGY FLORIDA
TYSP Forecast Error Evaluation Form
Data is NOT weather adjusted

Year	Actual Sys NEL (GWH)	Net Energy for Load (NEL) Forecast GWH TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	42,567	42,200																					
2003	43,911	42,440	43,108																				
2004	45,268	43,223	43,962	45,161																			
2005	46,878	44,148	45,206	45,745	46,722																		
2006	46,041	45,280	46,521	47,120	46,993	46,167																	
2007	47,633	45,944	47,413	48,044	48,329	47,759	48,194																
2008	47,658	46,943	48,348	49,047	49,446	49,076	49,468	48,734															
2009	44,124	48,123	49,399	50,147	50,299	50,148	50,609	49,768	48,556														
2010	46,160	49,284	50,467	51,263	51,998	52,006	52,516	51,615	48,765	43,819													
2011	42,490	50,437	51,583	52,356	53,052	53,219	53,776	52,913	49,846	42,750	42,047												
2012	41,214		52,722	53,478	54,278	54,434	55,017	54,695	52,485	44,443	44,253	41,534											
2013	40,772			54,608	55,516	55,704	56,321	56,045	53,647	45,877	45,637	40,973	40,786										
2014	40,975				56,999	56,948	57,732	56,905	52,759	46,458	46,367	42,552	41,565	39,801									
2015	42,280					58,211	59,074	58,166	53,117	46,815	46,794	43,633	42,549	40,490	41,426								
2016	42,854						60,460	59,448	53,644	46,477	46,176	43,596	43,421	41,098	41,947	41,277							
2017	42,919							60,836	54,612	46,343	46,128	43,823	43,824	41,375	42,365	41,932	41,475						
2018	44,224								55,614	46,932	46,674	44,533	44,452	41,995	42,779	42,417	41,887	43,060					
2019	44,801									47,922	47,814	45,854	45,037	43,013	43,572	43,044	42,520	43,331	43,206				
2020	44,814										48,390	46,576	45,654	43,998	44,069	43,559	43,127	44,063	43,620	43,645			
2021	45,064											47,180	46,179	44,419	44,322	43,895	43,463	44,555	43,949	43,939	43,103		
2022	46,141												46,689	44,870	44,681	44,289	43,751	45,088	44,519	44,591	44,980	43,440	
2023	44,046													45,459	45,080	44,679	44,089	45,515	44,466	44,536	44,424	43,432	42,897

Year	Actual NEL (GWH)	DEF System Net Energy For Load Forecast Variances - % TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	42,567	0.9%																					
2003	43,911	3.5%	1.9%																				
2004	45,268	4.7%	3.0%	0.2%																			
2005	46,878	6.2%	3.7%	2.5%	0.3%																		
2006	46,041	1.7%	-1.0%	-2.3%	-2.0%	-0.3%																	
2007	47,633	3.7%	0.5%	-0.9%	-1.4%	-0.3%	-1.2%																
2008	47,658	1.5%	-1.4%	-2.8%	-3.6%	-2.9%	-3.7%	-2.2%															
2009	44,124	-8.3%	-10.7%	-12.0%	-12.3%	-12.0%	-12.8%	-11.3%	-9.1%														
2010	46,160	-6.3%	-8.5%	-10.0%	-11.2%	-11.2%	-12.1%	-10.6%	-5.3%	5.3%													
2011	42,490	-15.8%	-17.6%	-18.8%	-19.9%	-20.2%	-21.0%	-19.7%	-14.8%	-0.6%	1.1%												
2012	41,214		-21.8%	-22.9%	-24.1%	-24.3%	-25.1%	-24.6%	-21.5%	-7.3%	-6.9%	-0.8%											
2013	40,772			-25.3%	-26.6%	-26.8%	-27.6%	-27.3%	-24.0%	-11.1%	-10.7%	-0.5%	0.0%										
2014	40,975				-28.1%	-28.0%	-29.0%	-28.0%	-22.3%	-11.8%	-11.6%	-3.7%	-1.4%	2.9%									
2015	42,280					-27.4%	-28.4%	-27.3%	-20.4%	-9.7%	-9.6%	-3.1%	-0.6%	4.4%	2.1%								
2016	42,854						-29.1%	-27.9%	-20.1%	-7.8%	-7.2%	-1.7%	-1.3%	4.3%	2.2%	3.8%							
2017	42,919							-29.5%	-21.4%	-7.4%	-7.0%	-2.1%	-2.1%	3.7%	1.3%	2.4%	3.5%						
2018	44,224								-20.5%	-5.8%	-5.3%	-0.7%	-0.5%	5.3%	3.4%	4.3%	5.6%	2.7%					
2019	44,801									-6.5%	-6.3%	-2.3%	-0.5%	4.2%	2.8%	4.1%	5.4%	3.4%	3.7%				
2020	44,814										-7.4%	-3.8%	-1.8%	1.9%	1.7%	2.9%	3.9%	1.7%	2.7%	2.7%			
2021	45,064											-4.5%	-2.4%	1.5%	1.7%	2.7%	3.7%	1.1%	2.5%	2.6%	4.6%		
2022	46,141												-1.2%	2.8%	3.3%	4.2%	5.5%	2.3%	3.6%	3.5%	2.6%	6.2%	
2023	44,046													-3.1%	-2.3%	-1.4%	-0.1%	-3.2%	-0.9%	-1.1%	-0.9%	1.4%	2.7%

DUKE ENERGY FLORIDA
TYSP Forecast Error Evaluation Form

Year	Actual System Customers	DEF System Customer Forecast TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	1,475,773	1,468,003																					
2003	1,510,526	1,489,564	1,500,477																				
2004	1,548,617	1,508,795	1,523,708	1,540,101																			
2005	1,583,387	1,528,789	1,546,102	1,567,693	1,574,447																		
2006	1,620,354	1,551,611	1,570,755	1,595,069	1,603,600	1,608,403																	
2007	1,632,359	1,576,834	1,596,923	1,623,037	1,632,925	1,639,122	1,645,969																
2008	1,638,929	1,603,431	1,624,099	1,651,611	1,662,016	1,669,301	1,679,343	1,662,325															
2009	1,630,166	1,630,482	1,651,774	1,680,503	1,690,993	1,699,499	1,712,064	1,694,687	1,639,432														
2010	1,634,191	1,657,236	1,679,447	1,708,932	1,719,780	1,729,379	1,744,641	1,727,055	1,649,751	1,629,536													
2011	1,642,376	1,686,942	1,710,533	1,736,295	1,748,339	1,758,708	1,777,280	1,759,469	1,670,011	1,642,845	1,642,842												
2012	1,695,713		1,733,663	1,762,757	1,776,709	1,787,722	1,810,126	1,791,810	1,696,126	1,663,026	1,663,023	1,651,398											
2013	1,671,220			1,788,650	1,804,949	1,816,528	1,843,147	1,824,240	1,726,408	1,688,549	1,688,549	1,669,205	1,673,018										
2014	1,695,711				1,833,114	1,845,178	1,876,090	1,856,553	1,757,554	1,715,811	1,715,811	1,696,574	1,696,482	1,692,614									
2015	1,721,551					1,873,800	1,908,680	1,888,544	1,788,202	1,743,531	1,743,531	1,729,077	1,723,531	1,718,930	1,719,415								
2016	1,748,131						1,940,633	1,918,178	1,817,295	1,770,640	1,770,640	1,758,211	1,750,008	1,745,332	1,745,429	1,748,147							
2017	1,775,472							1,947,284	1,844,978	1,797,062	1,797,062	1,786,510	1,777,249	1,771,848	1,772,592	1,776,705	1,778,929						
2018	1,802,714								1,871,706	1,823,014	1,823,014	1,813,830	1,805,116	1,797,281	1,800,353	1,805,008	1,809,791	1,806,086					
2019	1,831,269									1,848,690	1,848,690	1,840,809	1,833,202	1,821,256	1,828,216	1,833,370	1,840,246	1,835,638	1,832,032				
2020	1,863,385										1,874,295	1,867,682	1,861,162	1,844,727	1,855,717	1,861,625	1,870,068	1,865,057	1,857,355	1,856,728			
2021	1,878,278											1,894,632	1,888,704	1,867,398	1,882,508	1,889,404	1,898,760	1,894,148	1,886,392	1,883,227	1,893,024		
2022	1,933,061												1,915,812	1,889,454	1,908,539	1,916,504	1,926,509	1,922,333	1,915,022	1,910,532	1,923,069	1,936,334	
2023	1,968,222													1,910,206	1,933,889	1,943,000	1,953,422	1,949,980	1,943,546	1,938,607	1,952,290	1,973,754	1,975,742

Year	Actual System Customers	DEF System Customer Forecast Variances - % TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	1,475,773	0.5%																					
2003	1,510,526	1.4%	0.7%																				
2004	1,548,617	2.6%	1.6%	0.6%																			
2005	1,583,387	3.6%	2.4%	1.0%	0.6%																		
2006	1,620,354	4.4%	3.2%	1.6%	1.0%	0.7%																	
2007	1,632,359	3.5%	2.2%	0.6%	0.0%	-0.4%	-0.8%																
2008	1,638,929	2.2%	0.9%	-0.8%	-1.4%	-1.8%	-2.4%	-1.4%															
2009	1,630,166	0.0%	-1.3%	-3.0%	-3.6%	-4.1%	-4.8%	-3.8%	-0.6%														
2010	1,634,191	-1.4%	-2.7%	-4.4%	-5.0%	-5.5%	-6.3%	-5.4%	-0.9%	0.3%													
2011	1,642,376	-2.6%	-4.0%	-5.4%	-6.1%	-6.6%	-7.6%	-6.7%	-1.7%	0.0%	0.0%												
2012	1,695,713		-2.2%	-3.8%	-4.6%	-5.1%	-6.3%	-5.4%	0.0%	2.0%	2.0%	2.7%											
2013	1,671,220			-6.6%	-7.4%	-8.0%	-9.3%	-8.4%	-3.2%	-1.0%	-1.0%	0.1%	-0.1%										
2014	1,695,711				-7.5%	-8.1%	-9.6%	-8.7%	-3.5%	-1.2%	-1.2%	-0.1%	0.0%	0.2%									
2015	1,721,551					-8.1%	-9.8%	-8.8%	-3.7%	-1.3%	-1.3%	-0.4%	-0.1%	0.2%	0.1%								
2016	1,748,131						-9.9%	-8.9%	-3.8%	-1.3%	-1.3%	-0.6%	-0.1%	0.2%	0.2%	0.0%							
2017	1,775,472							-8.8%	-3.8%	-1.2%	-1.2%	-0.6%	-0.1%	0.2%	0.2%	-0.1%	-0.2%						
2018	1,802,714								-3.7%	-1.1%	-1.1%	-0.6%	-0.1%	0.3%	0.1%	-0.1%	-0.4%	-0.2%					
2019	1,831,269									-0.9%	-0.9%	-0.5%	-0.1%	0.5%	0.2%	-0.1%	-0.5%	-0.2%	0.0%				
2020	1,863,385										-0.6%	-0.2%	0.1%	1.0%	0.4%	0.1%	-0.4%	-0.1%	0.3%	0.4%			
2021	1,878,278											-0.9%	-0.6%	0.6%	-0.2%	-0.6%	-1.1%	-0.8%	-0.4%	-0.3%	-0.8%		
2022	1,933,061												0.9%	2.3%	1.3%	0.9%	0.3%	0.6%	0.9%	1.2%	0.5%	-0.2%	
2023	1,968,222													3.0%	1.8%	1.3%	0.8%	0.9%	1.3%	1.5%	0.8%	-0.3%	

DUKE ENERGY FLORIDA
TYSP Forecast Error Evaluation Form
Data is NOT weather adjusted

DEF Retail Summer Peak Forecast, No DR Activated

Year	Actual Retail Summer Peak (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	7,842	7,365																					
2003	7,593	7,567	7,684																				
2004	8,058	7,689	7,853	7,942																			
2005	8,565	7,817	8,002	8,122	8,154																		
2006	8,432	7,962	8,164	8,303	8,357	8,352																	
2007	8,861	8,115	8,334	8,486	8,554	8,576	8,816																
2008	8,524	8,279	8,510	8,672	8,727	8,786	9,044	8,746															
2009	8,643	8,448	8,691	8,863	8,899	8,986	9,247	8,953	8,631														
2010	8,328	8,624	8,879	9,047	9,089	9,181	9,453	9,138	8,687	8,428													
2011	8,343	8,800	9,070	9,224	9,278	9,376	9,661	9,340	8,837	8,461	8,488												
2012	7,946		9,259	9,395	9,465	9,568	9,864	9,544	9,021	8,562	8,564	8,536											
2013	8,195			9,561	9,651	9,759	10,069	9,747	9,267	8,723	8,705	8,611	8,732										
2014	8,404				9,836	9,946	10,270	9,941	9,465	8,822	8,791	8,759	8,871	8,705									
2015	8,446					10,142	10,479	10,146	9,667	8,905	8,870	8,972	9,038	8,944	8,843								
2016	8,779						10,698	10,326	9,813	8,956	8,933	9,146	9,199	9,207	9,073	9,018							
2017	8,520							10,506	9,991	9,042	9,027	9,330	9,381	9,477	9,235	9,140	8,866						
2018	8,492								10,163	9,137	9,120	9,503	9,561	9,626	9,387	9,315	8,992	8,691					
2019	8,985									9,238	9,215	9,689	9,756	9,806	9,576	9,485	9,107	8,813	8,791				
2020	8,746										9,314	9,872	9,950	9,959	9,775	9,615	9,244	8,907	8,858	8,781			
2021	8,671											10,050	10,136	9,952	9,934	9,746	9,336	9,000	8,917	8,820	8,693		
2022	8,932												10,310	10,067	10,090	9,874	9,427	9,094	8,993	8,893	8,862	8,746	
2023	9,492													10,173	10,241	9,999	9,519	9,189	9,058	8,933	8,955	8,756	8,612

DEF Retail Summer Peak Forecast Variances - %

Year	Actual Retail Summer Peak (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	7,842	6.5%																					
2003	7,593	0.3%	-1.2%																				
2004	8,058	4.8%	2.6%	1.5%																			
2005	8,565	9.6%	7.0%	5.4%	5.0%																		
2006	8,432	5.9%	3.3%	1.5%	0.9%	1.0%																	
2007	8,861	9.2%	6.3%	4.4%	3.6%	3.3%	0.5%																
2008	8,524	3.0%	0.2%	-1.7%	-2.3%	-3.0%	-5.7%	-2.5%															
2009	8,643	2.3%	-0.5%	-2.5%	-2.9%	-3.8%	-6.5%	-3.5%	0.1%														
2010	8,328	-3.4%	-6.2%	-8.0%	-8.4%	-9.3%	-11.9%	-8.9%	-4.1%	-1.2%													
2011	8,343	-5.2%	-8.0%	-9.6%	-10.1%	-11.0%	-13.6%	-10.7%	-5.6%	-1.4%	-1.7%												
2012	7,946		-14.2%	-15.4%	-16.0%	-17.0%	-19.4%	-16.7%	-11.9%	-7.2%	-7.2%	-6.9%											
2013	8,195			-14.3%	-15.1%	-16.0%	-18.6%	-15.9%	-11.6%	-6.1%	-5.9%	-4.8%	-6.2%										
2014	8,404				-14.6%	-15.5%	-18.2%	-15.5%	-11.2%	-4.7%	-4.4%	-4.1%	-5.3%	-3.5%									
2015	8,446					-16.7%	-19.4%	-16.8%	-12.6%	-5.2%	-4.8%	-5.9%	-6.6%	-5.6%	-4.5%								
2016	8,779						-17.9%	-15.0%	-10.5%	-2.0%	-1.7%	-4.0%	-4.6%	-4.6%	-3.2%	-2.7%							
2017	8,520							-18.9%	-14.7%	-5.8%	-5.6%	-8.7%	-9.2%	-10.1%	-7.7%	-6.8%	-3.9%						
2018	8,492								-16.4%	-7.1%	-6.9%	-10.6%	-11.2%	-11.8%	-9.5%	-8.8%	-5.6%	-2.3%					
2019	8,985									-2.7%	-2.5%	-7.3%	-7.9%	-8.4%	-6.2%	-5.3%	-1.3%	2.0%	2.2%				
2020	8,746										-6.1%	-11.4%	-12.1%	-12.2%	-10.5%	-9.0%	-5.4%	-1.8%	-1.3%	-0.4%			
2021	8,671											-13.7%	-14.5%	-12.9%	-12.7%	-11.0%	-7.1%	-3.7%	-2.8%	-1.7%	-0.3%		
2022	8,932												-13.4%	-11.3%	-11.5%	-9.5%	-5.3%	-1.8%	-0.7%	0.4%	0.8%	2.1%	
2023	9,492													-6.7%	-7.3%	-5.1%	-0.3%	3.3%	4.8%	6.3%	6.0%	8.4%	10.2%

DEF Retail Winter Peak Forecast, No DR Activated

Year	Actual Retail Winter Peak (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	8,590	8,147																					
2003	8,974	8,413	8,397																				
2004	7,585	8,581	8,577	8,676																			
2005	8,627	8,695	8,726	8,842	8,865																		
2006	8,679	8,818	8,880	9,009	9,035	9,066																	
2007	7,607	8,957	9,042	9,171	9,214	9,252	9,426																
2008	8,454	9,101	9,195	9,336	9,386	9,456	9,701	9,447															
2009	9,085	9,260	9,355	9,506	9,556	9,632	9,881	9,578	9,371														
2010	10,686	9,419	9,516	9,677	9,723	9,810	10,059	9,754	9,345	9,159													

2011	8,909	9,603	9,705	9,839	9,890	9,984	10,244	9,931	9,427	9,122	9,173												
2012	7,817		9,890	9,995	10,049	10,149	10,422	10,102	9,561	9,203	9,247	9,045											
2013	7,201			10,145	10,208	10,312	10,601	10,282	9,761	9,343	9,379	9,056	9,224										
2014	7,671				10,367	10,477	10,781	10,450	9,927	9,438	9,464	9,141	9,309	9,070									
2015	8,438					10,641	10,951	10,616	10,087	9,523	9,542	9,316	9,443	8,881	9,222								
2016	7,649						11,174	10,783	10,217	9,571	9,604	9,488	9,585	9,133	9,399	9,227							
2017	6,837							10,939	10,378	9,641	9,695	9,650	9,739	9,385	9,517	9,353	8,941						
2018	9,249								10,531	9,737	9,785	9,815	9,904	9,654	9,630	9,460	9,063	8,985					
2019	6,707									9,836	9,877	9,984	10,086	9,807	9,782	9,608	9,174	9,118	8,949				
2020	7,794										9,971	10,148	10,261	9,926	9,942	9,764	9,313	9,211	9,054	9,191			
2021	7,629											10,312	10,434	10,029	10,064	9,886	9,411	9,435	9,157	9,322	8,720		
2022	8,202												10,598	10,143	10,184	10,005	9,507	9,508	9,229	9,419	8,912	8,889	
2023	8,110													10,224	10,302	10,123	9,600	9,602	9,285	9,494	9,041	8,925	8,663
	Actual	**DEF Retail Winter Peak Forecast Variances - %**																					
Year	**Retail Winter Peak (MW)**	**TYSP 2002**	**TYSP 2003**	**TYSP 2004**	**TYSP 2005**	**TYSP 2006**	**TYSP 2007**	**TYSP 2008**	**TYSP 2009**	**TYSP 2010**	**TYSP 2011**	**TYSP 2012**	**TYSP 2013**	**TYSP 2014**	**TYSP 2015**	**TYSP 2016**	**TYSP 2017**	**TYSP 2018**	**TYSP 2019**	**TYSP 2020**	**TYSP 2021**	**TYSP 2022**	**TYSP 2023**
2002	8,590	5.4%																					
2003	8,974	6.7%	6.9%																				
2004	7,585	-11.6%	-11.6%	-12.6%																			
2005	8,627	-0.8%	-1.1%	-2.4%	-2.7%																		
2006	8,679	-1.6%	-2.3%	-3.7%	-3.9%	-4.3%																	
2007	7,607	-15.1%	-15.9%	-17.1%	-17.4%	-17.8%	-19.3%																
2008	8,454	-7.1%	-8.1%	-9.4%	-9.9%	-10.6%	-12.9%	-10.5%															
2009	9,085	-1.9%	-2.9%	-4.4%	-4.9%	-5.7%	-8.1%	-5.2%	-3.1%														
2010	10,686	13.5%	12.3%	10.4%	9.9%	8.9%	6.2%	9.6%	14.3%	16.7%													
2011	8,909	-7.2%	-8.2%	-9.5%	-9.9%	-10.8%	-13.0%	-10.3%	-5.5%	-2.3%	-2.9%												
2012	7,817		-21.0%	-21.8%	-22.2%	-23.0%	-25.0%	-22.6%	-18.2%	-15.1%	-15.5%	-13.6%											
2013	7,201			-29.0%	-29.5%	-30.2%	-32.1%	-30.0%	-26.2%	-22.9%	-23.2%	-20.5%	-21.9%										
2014	7,671				-26.0%	-26.8%	-28.8%	-26.6%	-22.7%	-18.7%	-18.9%	-16.1%	-17.6%	-15.4%									
2015	8,438					-20.7%	-22.9%	-20.5%	-16.3%	-11.4%	-11.6%	-9.4%	-10.6%	-5.0%	-8.5%								
2016	7,649						-31.5%	-29.1%	-25.1%	-20.1%	-20.4%	-19.4%	-20.2%	-16.2%	-18.6%	-17.1%							
2017	6,837							-37.5%	-34.1%	-29.1%	-29.5%	-29.2%	-29.8%	-27.2%	-28.2%	-26.9%	-23.5%						
2018	9,249								-12.2%	-5.0%	-5.5%	-5.8%	-6.6%	-4.2%	-4.0%	-2.2%	2.1%	2.9%					
2019	6,707									-31.8%	-32.1%	-32.8%	-33.5%	-31.6%	-31.4%	-30.2%	-26.9%	-26.4%	-25.1%				
2020	7,794										-21.8%	-23.2%	-24.0%	-21.5%	-21.6%	-20.2%	-16.3%	-15.4%	-13.9%	-15.2%			
2021	7,629											-26.0%	-26.9%	-23.9%	-24.2%	-22.8%	-18.9%	-19.1%	-16.7%	-18.2%	-12.5%		
2022	8,202												-22.6%	-19.1%	-19.5%	-18.0%	-13.7%	-13.7%	-11.1%	-12.9%	-8.0%	-7.7%	
2023	8,110													-20.7%	-21.3%	-19.9%	-15.5%	-15.5%	-12.7%	-14.6%	-10.3%	-9.1%	-6.4%

DUKE ENERGY FLORIDA
TYSP Forecast Error Evaluation Form
Data is NOT weather adjusted

DEF System Summer Peak Forecast, No DR Activated

Year	Act System Summer Pk (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	9,034	8,524																					
2003	8,476	8,305	8,371																				
2004	9,125	8,402	8,533	8,716																			
2005	9,681	8,580	8,666	8,812	9,102																		
2006	9,689	8,757	9,013	9,193	9,350	9,458																	
2007	10,449	8,915	9,250	9,414	9,617	9,758	10,137																
2008	10,036	9,153	9,414	9,576	9,820	10,008	10,382	10,089															
2009	10,261	9,397	9,579	9,711	9,962	10,187	10,439	10,144	10,242														
2010	9,600	9,616	9,750	9,899	10,302	10,538	10,722	10,402	10,220	9,715													
2011	9,277	9,866	9,943	10,047	10,496	10,748	10,948	10,622	10,358	9,571	9,436												
2012	9,026		10,131	10,187	10,695	10,964	11,160	10,983	10,713	9,841	9,610	9,629											
2013	8,776			10,356	10,902	11,165	11,389	11,210	10,983	10,025	9,761	9,415	9,669										
2014	9,218				11,106	11,375	11,739	11,403	11,000	9,915	9,766	9,464	9,742	9,509									
2015	9,218					11,589	11,962	11,621	11,225	10,004	9,848	9,677	9,911	9,750	9,655								
2016	9,646						12,196	11,817	11,400	10,161	9,762	9,701	10,176	9,865	9,720	9,533							
2017	9,293							12,016	11,602	10,301	9,859	9,986	10,275	10,064	9,986	9,770	9,617						
2018	9,271								11,801	10,452	9,954	10,159	10,455	10,213	10,139	9,893	9,745	9,497					
2019	9,970									10,859	10,301	10,595	10,650	10,643	10,580	10,319	10,111	9,817	9,770				
2020	9,647										10,403	10,778	10,844	10,796	10,780	10,450	10,209	9,872	9,797	9,731			
2021	9,681											10,856	10,930	10,823	10,689	10,098	10,051	9,816	9,880	9,783	9,434		
2022	9,977												11,104	10,948	10,845	10,234	10,142	9,911	9,956	9,856	9,942	9,650	
2023	10,268													11,063	10,996	10,367	10,234	10,006	9,720	9,595	9,617	9,417	9,073

DEF System Summer Peak Forecast Variances - %

Year	Actual Summer Peak (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	9,034	6.0%																					
2003	8,476	2.1%	1.2%																				
2004	9,125	8.6%	6.9%	4.7%																			
2005	9,681	12.8%	11.7%	9.9%	6.4%																		
2006	9,689	10.6%	7.5%	5.4%	3.6%	2.4%																	
2007	10,449	17.2%	13.0%	11.0%	8.7%	7.1%	3.1%																
2008	10,036	9.6%	6.6%	4.8%	2.2%	0.3%	-3.3%	-0.5%															
2009	10,261	9.2%	7.1%	5.7%	3.0%	0.7%	-1.7%	1.2%	0.2%														
2010	9,600	-0.2%	-1.5%	-3.0%	-6.8%	-8.9%	-10.5%	-7.7%	-6.1%	-1.2%													
2011	9,277	-6.0%	-6.7%	-7.7%	-11.6%	-13.7%	-15.3%	-12.7%	-10.4%	-3.1%	-1.7%												
2012	9,026		-10.9%	-11.4%	-15.6%	-17.7%	-19.1%	-17.8%	-15.7%	-8.3%	-6.1%	-6.3%											
2013	8,776			-15.3%	-19.5%	-21.4%	-22.9%	-21.7%	-20.1%	-12.5%	-10.1%	-6.8%	-9.2%										
2014	9,218				-17.0%	-19.0%	-21.5%	-19.2%	-16.2%	-7.0%	-5.6%	-2.6%	-5.4%	-3.1%									
2015	9,218					-20.5%	-22.9%	-20.7%	-17.9%	-7.9%	-6.4%	-4.7%	-7.0%	-5.5%	-4.5%								
2016	9,646						-20.9%	-18.4%	-15.4%	-5.1%	-1.2%	-0.6%	-5.2%	-2.2%	-0.8%	1.2%							
2017	9,293							-22.7%	-19.9%	-9.8%	-5.7%	-6.9%	-9.6%	-7.7%	-6.9%	-4.9%	-3.4%						
2018	9,271								-21.4%	-11.3%	-6.9%	-8.7%	-11.3%	-9.2%	-8.6%	-6.3%	-4.9%	-2.4%					
2019	9,970									-8.2%	-3.2%	-5.9%	-6.4%	-6.3%	-5.8%	-3.4%	-1.4%	1.6%	2.0%				
2020	9,647										-7.3%	-10.5%	-11.0%	-10.6%	-10.5%	-7.7%	-5.5%	-2.3%	-1.5%	-0.9%			
2021	9,681											-10.8%	-11.4%	-10.6%	-9.4%	-4.1%	-3.7%	-1.4%	-2.0%	-1.0%	2.6%		
2022	9,977												-10.1%	-8.9%	-8.0%	-2.5%	-1.6%	0.7%	0.2%	1.2%	0.4%	3.4%	
2023	10,268													-7.2%	-6.6%	-1.0%	0.3%	2.6%	5.6%	7.0%	6.8%	9.0%	13.2%

DEF System Winter Peak Forecast, No DR Activated

Year	Act System Winter Peak (MW)	TYSP 2002	TYSP 2003	TYSP 2004	TYSP 2005	TYSP 2006	TYSP 2007	TYSP 2008	TYSP 2009	TYSP 2010	TYSP 2011	TYSP 2012	TYSP 2013	TYSP 2014	TYSP 2015	TYSP 2016	TYSP 2017	TYSP 2018	TYSP 2019	TYSP 2020	TYSP 2021	TYSP 2022	TYSP 2023
2002	10,202	9,749																					
2003	10,507	9,773	9,796																				
2004	8,748	9,774	9,890	10,084																			
2005	10,226	9,961	10,060	10,350	10,636																		
2006	10,146	10,139	10,277	10,446	10,537	10,479																	
2007	9,182	10,358	10,746	10,885	11,021	10,992	11,137																
2008	10,282	10,549	10,871	11,007	11,211	11,190	11,490	11,482															
2009	11,313	10,808	11,050	11,155	11,412	11,526	11,608	11,293	11,388														
2010	12,860	11,035	11,239	11,373	11,772	11,898	12,071	11,753	11,445	11,009													

2011	10,534	11,318	11,455	11,531	11,996	12,096	12,326	12,004	11,604	10,895	10,798												
2012	8,722		11,675	11,689	12,214	12,340	12,663	12,484	11,989	11,222	10,919	10,437											
2013	8,032			11,876	12,438	12,565	12,978	12,800	12,325	11,496	11,080	10,249	10,133										
2014	8,329				12,662	12,791	13,237	12,898	12,240	11,093	11,113	9,946	10,251	9,965									
2015	9,473					12,999	13,499	13,154	12,486	11,182	11,243	10,621	10,888	10,257	10,603								
2016	8,513						13,813	13,411	12,704	11,235	11,359	10,794	11,032	10,511	10,743	10,571							
2017	7,538							13,655	12,951	11,410	11,352	10,806	11,133	10,473	10,714	10,550	10,138						
2018	10,320								13,189	11,561	11,495	10,971	11,298	10,742	10,828	10,658	10,261	10,236					
2019	7,248									11,716	11,889	11,390	11,480	10,895	10,980	10,806	10,372	10,316	10,174				
2020	8,407										12,037	11,554	11,655	11,264	11,390	11,172	10,721	10,619	10,435	10,577			
2021	8,308											11,718	11,828	11,367	11,363	10,894	10,070	10,154	9,870	10,035	9,376		
2022	9,240												11,992	11,466	11,483	11,013	10,166	10,317	10,243	10,433	10,564	9,938	
2023	7,840													11,561	11,601	11,131	10,259	10,411	9,998	10,207	10,306	10,189	9,275
	Actual	**DEF System Winter Peak Forecast Variances - %**																					
	Winter	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**	**TYSP**
Year	**Peak (MW)**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
2002	10,202	4.6%																					
2003	10,507	7.5%	7.3%																				
2004	8,748	-10.5%	-11.5%	-13.2%																			
2005	10,226	2.7%	1.6%	-1.2%	-3.9%																		
2006	10,146	0.1%	-1.3%	-2.9%	-3.7%	-3.2%																	
2007	9,182	-11.4%	-14.6%	-15.6%	-16.7%	-16.5%	-17.6%																
2008	10,282	-2.5%	-5.4%	-6.6%	-8.3%	-8.1%	-10.5%	-10.5%															
2009	11,313	4.7%	2.4%	1.4%	-0.9%	-1.8%	-2.5%	0.2%	-0.7%														
2010	12,860	16.5%	14.4%	13.1%	9.2%	8.1%	6.5%	9.4%	12.4%	16.8%													
2011	10,534	-6.9%	-8.0%	-8.6%	-12.2%	-12.9%	-14.5%	-12.2%	-9.2%	-3.3%	-2.4%												
2012	8,722		-25.3%	-25.4%	-28.6%	-29.3%	-31.1%	-30.1%	-27.2%	-22.3%	-20.1%	-16.4%											
2013	8,032			-32.4%	-35.4%	-36.1%	-38.1%	-37.3%	-34.8%	-30.1%	-27.5%	-21.6%	-20.7%										
2014	8,329				-34.2%	-34.9%	-37.1%	-35.4%	-32.0%	-24.9%	-25.1%	-16.3%	-18.7%	-16.4%									
2015	9,473					-27.1%	-29.8%	-28.0%	-24.1%	-15.3%	-15.7%	-10.8%	-13.0%	-7.6%	-10.7%								
2016	8,513						-38.4%	-36.5%	-33.0%	-24.2%	-25.1%	-21.1%	-22.8%	-19.0%	-20.8%	-19.5%							
2017	7,538							-44.8%	-41.8%	-33.9%	-33.6%	-30.2%	-32.3%	-28.0%	-29.6%	-28.5%	-25.6%						
2018	10,320								-21.8%	-10.7%	-10.2%	-5.9%	-8.7%	-3.9%	-4.7%	-3.2%	0.6%	0.8%					
2019	7,248									-38.1%	-39.0%	-36.4%	-36.9%	-33.5%	-34.0%	-32.9%	-30.1%	-29.7%					
2020	8,407										-30.2%	-27.2%	-27.9%	-25.4%	-26.2%	-24.7%	-21.6%	-20.8%	-19.4%	-20.5%			
2021	8,308											-29.1%	-29.8%	-26.9%	-26.9%	-23.7%	-17.5%	-18.2%	-15.8%	-17.2%	-11.4%		
2022	9,240												-22.9%	-19.4%	-19.5%	-16.1%	-9.1%	-10.4%	-9.8%	-11.4%	-12.5%	-7.0%	
2023	7,840													-32.2%	-32.4%	-29.6%	-23.6%	-24.7%	-21.6%	-23.2%	-23.9%	-23.1%	-15.5%

TYSP Year	2024
Staff's Data Request #	1
Question No.	17
Part	b

Year	Cumulative Customer Owned/Leased Renewable Generation											
	Residential Energy Impact (MWh)	**Commercial Energy Impact (MWh)**	**Industrial Energy Impact (MWh)**	**Total Energy Impact (MWh)**	**Residential Summer Demand (MW)**	**Residential Winter Demand (MW)**	**Commercial Summer Demand (MW)**	**Commercial Winter Demand (MW)**	**Industrial Summer Demand (MW)**	**Industrial Winter Demand (MW)**	**Total Summer Demand (MW)**	**Total Winter Demand (MW)**
2024	(176,088)	(5,107)	(364)	(181,558)	(31)	(0)	(1)	(0)	(0)	0	(32)	(0)
2025	(524,422)	(15,305)	(1,046)	(540,773)	(80)	(2)	(2)	(0)	(0)	(0)	(83)	(2)
2026	(888,692)	(25,789)	(1,725)	(916,207)	(131)	(4)	(4)	(0)	(0)	(0)	(135)	(4)
2027	(1,266,976)	(36,867)	(2,401)	(1,306,245)	(184)	(6)	(5)	(0)	(0)	(0)	(190)	(6)
2028	(1,590,454)	(46,199)	(3,080)	(1,639,733)	(225)	(8)	(7)	(0)	(0)	(0)	(232)	(8)
2029	(1,800,434)	(52,437)	(3,742)	(1,856,613)	(255)	(9)	(8)	(0)	(1)	(0)	(263)	(9)
2030	(2,022,002)	(58,717)	(4,408)	(2,085,127)	(286)	(10)	(8)	(0)	(1)	(0)	(295)	(10)
2031	(2,255,077)	(65,530)	(5,070)	(2,325,677)	(318)	(11)	(9)	(0)	(1)	(0)	(328)	(11)
2032	(2,500,119)	(72,843)	(5,742)	(2,578,704)	(352)	(12)	(10)	(0)	(1)	(0)	(363)	(13)
2033	(2,722,581)	(79,291)	(6,385)	(2,808,257)	(383)	(13)	(11)	(0)	(1)	(0)	(395)	(14)
Notes												
The negative values indicate that customer owned PV is a reduction to projected load												

TYSP Year	2024
Staff's Data Request #	1
Question No.	17
Part	c

Year	Cumulative Customer Owned/Leased Renewable Generation Counts			
	Residential Customers	Commercial Customers	Industrial Customers	Total Customers
2024	120,710	944	3	121,657
2025	146,751	1,076	5	147,832
2026	174,060	1,217	7	175,284
2027	202,323	1,361	9	203,693
2028	220,209	1,454	11	221,674
2029	236,573	1,538	13	238,124
2030	253,789	1,623	15	255,427
2031	271,921	1,719	17	273,657
2032	290,055	1,815	19	291,889
2033	306,961	1,899	21	308,881
Notes				
Historical non-residential data not distinguished between commercial and industrial - assumed all commercial				

TYSP Year 2024
Staff's Data Request # 1
Question No. 79

Year		**Coal**		**Natural Gas**		**Distillate Oil**	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Projected	**2023**	1,233	7.52	36,532	6.52	1	21.33
Actual	**2023**	3,829	4.61	35,526	4.16	29	26.51
Notes							
(Include Notes Here)							