225 N Pearl St.
Jacksonville, Florida 32202

May 1st, 2024

ELECTRIC

WATER

SEWER

Commission Clerk
Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Commission Clerk:

On behalf of JEA, please accept the Ten-Year Site Plan Review - Staff's Data Request #1.

If you have any questions, please contact me by email at landsg@jea.com.

Sincerely,

Stephany Landaeta Gutierrez
Associate Engineer
JEA

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

1. Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the current planning period (2024-2033) in PDF format.

2. Please provide an electronic copy of all schedules and tables in the Company's current planning period TYSP in Excel format.

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.

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).

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. (Please see excel file)

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.

    JEA utilizes NOAA Weather Station: Jacksonville International Airport (13889/JAX).

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.

Customers

The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, total population, number of households, median household income, total housing starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.

The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, total commercial employment, gross domestic product from Moody's Analytics, and commercial inventory square footage from the CBRE Market view 2023 Report.

The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, gross domestic product from Moody's Analytics and JEA's Industrial accounts.

Customer-Sited Renewables

The customer-sited renewables forecast was included in JEA's 2024 TYSP. This forecast included an analysis on rooftop solar PV and battery storage. The study was conducted by Black & Veatch Consulting group. The solar PV analysis accounted for available roof space (including pitched vs. flat roofs, other roof equipment, etc.), PV power density, hourly generation shapes, and AC/DC ratios, among other factors. These technical potential calculations were supplemented by forecasting market adoption of solar PV systems over a 30-year forecast horizon. A rigorous hourly economic analysis calculated the point at which it is cost-effective for customers to install a system as a function of $/kW, discount rates, and other costs using the extensive sensitivity analysis capabilities of the modeling software.

The battery storage analysis focused primarily on technical potential for paired solar + energy storage systems. The modeling software accounted for the complex economics of a storage technology, which can shift load to reduce energy charges (e.g., through on/off peak period arbitration) or reduce peak demand charges, by utilizing an hourly battery storage dispatch optimization module. This analysis simulates the hourly dispatch of stand-alone or solar-paired storage systems, accounting for electric rate structure, system characteristics, customer load profile, and solar PV generation profile.

Demand

JEA normalizes historical seasonal peaks using historical maximum and minimum temperatures. JEA uses 25°F as the normal temperature for the winter peak and 97°F for the normal summer peak demands. JEA develops the seasonal peak forecasts using normalized historical and forecasted residential, commercial, and industrial energy for winter/summer peak months, and the average load factor based on historical peaks and net energy for winter/summer peak months.

Energy Sales

The total Energy Sales Forecasts is developed by combining 8 different forecasts which include:

- Residential, Commercial and Industrial Forecast (discussed above)
- PEV Forecast
- Electrification Forecast
- Conservation Forecast
- Customer-Sited Renewables
- Lighting Forecast

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.

   None

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.

   JEA compares forecasted values with actual values to determine if reevaluation of our forecast process is necessary. In the recent year, JEA had an independent consulting firm review JEA's forecast methodology, and it was determined JEA to be consistent with industry standards and within acceptable forecast error range.

JEA compares actual values against forecasted values for years 2003-2023 in a matrix. Then, the percentage variance between the actual and forecasted values is calculated for each year to determine whether the forecast overestimated or underestimated the actual value. For 2023 there is a 1.8% forecast error for the Net Energy when comparing to actual value. JEA will continue to observe its forecast errors for the remainder of this year. Should the forecast error remain above the acceptable error range, JEA will reevaluate and revamp its forecast process and methodology or solicit help from an independent consulting firm.

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.

JEA utilizes the same method as explained in question 9. After a review provided by the independent consulting firm, JEA's forecast method is determined to be within industry standard. JEA's winter peak forecasts remain to have high forecast errors, primary due to the mild winters experienced over the past decade, however, JEA's summer peak forecasts are within an acceptable forecast error range.

JEA will continue to observe its forecast errors for the remainder of this year and determine if it needs reevaluate and revamp its forecast process and methodology or solicit help from an independent consulting firm.

(Please see attached file)

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.

       Overall, Moody's Analytics forecast percentage growth for all parameters used in JEA's 2024 TYSP are very similar as compared to the 2023 forecast. There is a 1.1% growth for Residential, 0.3% growth for Commercial, and 0.3% growth for Industrial customers.

We see Residential sales as our higher rate because of the housing growth in our service territory per Moody's analytics forecast.

JEA will continue to observe its forecast errors for the remainder of this year and determine if it needs reevaluate and revamp its forecast process and methodology.

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.

JEA funded demand-side management programs continue to be the contributors to the decrease in annual use per residential customer. There are other several factors that contribute to the declining trend in average kWh/customer. Customer behavioral changes over the last 10 years and increased in electric rates contributed to the continuous decline. JEA does not expect this behavior to change. Also, JEA continues to observe more multifamily housing constructions compared to single-family housing, which use less energy per customer. JEA expects this trend toward multifamily housing construction to continue throughout the TYSP forecast period.

The US Government's SEER Requirement Changes for 2015, that required new split system central air conditioners to be a minimum 14 SEER, had contributed to the majority of decrease in use over the past years, as customers replaced their old units with more energy efficient units that complied with or exceeded the standard, and as the new constructions complied with the standard. The new 2023 SEER rating standards, now requiring new air conditioners in Southern states to be a minimum 15 SEER, will continue to contribute to the decrease in electricity usage.

As shown in JEA's 2024 TYSP, the average KWh per customer for Residential stays flat for the 10-year period.

Similar to JEA's offerings to residential customers, JEA offers energy audit programs to audit commercial and industrial customers' businesses and provides education and recommendations on low-cost or no-cost energy-saving practices and measures. JEA offers financial incentives to commercial customers on energy efficient lighting, and other energy efficient products.

In JEA's 2024 TYSP, we see the average KWh per customer for Commercial is decreasing for the forecasted 10-year period:

- Growth rate for average KWh per Commercial customer is (0.9%)

And we see a small growth in the average KWh for Industrial customers for the forecasted 10-year period:

- Growth rate for average KWh per Industrial customer is 0.2%

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.

   JEA offers energy audit programs to audit customers' homes and provide them with education and recommendations on low-cost or no-cost energy-saving practices and measures. Financial incentives are offered to residential customers, builders and developers on energy efficient lightings, solar water heating technologies, solar net metering, energy efficient construction and other energy efficient products in homes. The amount of estimated energy savings annually can be found in JEA's TYSP, Schedules 3.1 - 3.3.

   JEA's 2024 forecasted Net Energy for Load (NEL) annual average growth rate (AAGR) is 0.82%

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).

   JEA continues to implement DSM programs that are economically beneficial and meet JEA's Florida Energy Efficiency and Conservation Act (FEECA) goals. JEA's programs focus on improving the efficiency of customer end use equipment, as well as, improving the system load factor through behavioral education and technology incentives. JEA funded demand-side management programs continue to be the contributors to the decrease in annual use per residential customer.

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.

      JEA's demand reduction due to conservation and self-service (or self-conservation from energy audit program) is the estimated peak reductions correlated to the energy savings from its conservation programs offered to JEA's residential, commercial and industrial customers.

   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.

JEA currently do not have any demand response for residential customers. Currently, the only demand reduction is JEA's interruptible customers, which consist on large commercial and industrial customers.

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

JEA's peak forecast is developed by using the forecasted energy for residential, commercial and industrial and the average load factor based on historical peaks and net energy for summer/winter peak months. The residential, commercial and industrial energy forecast trends are discussed in question 11 above. JEA's 2024 summer total peak forecast AAGR is 0.78%. The 2023 winter total peak forecast AAGR is 0.76%

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.

JEA's 2024 forecasted cumulative conservation continues to grow. Consequently, bringing down JEA's Net Firm due to the demand-side management program discussed in question 11.

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.

The DSM and Conservation-related portions of Schedules 3.1, 3.2 and 3.3 reflect projections of demand and energy reductions, set by JEA, that our customers may achieve through DSM, Energy Efficiency, and Conservation. The projections are not directly related to the goals established in the 2019 goal setting proceeding for the period 2020-2024. JEA will revisit these projections as part of its future TYSP filings.

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.

Many factors contributed to the decrease in peak demand and energy sales. Since the recession, there was change in customers behavior to conserve energy. Continuous improvement in efficiency in new appliances and equipment, the phase-out of incandescent bulbs and conversion to LED bulbs, the change in technologies to high energy efficient technologies also contribute to the decrease in energy consumptions. Another big contributor is the new US Government's SEER Requirement Changes for 2015, that required new split system central air conditioners to be a minimum 14 SEER, had contributed to the majority of decrease in use over the past years, as customers replaced their old units with more energy efficient units that complied with or exceeded the standard, and as the new constructions complied with the standard. The new 2023 SEER rating standards, now requiring new air conditioners in Southern states to be a minimum 15 SEER, will continue to contribute to the decrease in electricity usage. COVID- 19 pandemic also contributed to the decline in consumption.

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.

       JEA develops the normal weather using 10-year historical average heating/cooling degree days and maximum/minimum temperatures. Normal months, with heating/cooling degree days and maximum/minimum temperatures that are closest to the averages, are then selected. JEA updates its normal weather every 5 years or more frequently, if needed.

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

       NOAA Weather Station - Jacksonville International Airport

    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.

       JEA does not convert raw weather data. JEA pairs the hourly load with the respective hourly temperature, the heating and cooling degree with the respective daily energy.

    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.

           10 years.

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

10 years

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.

Energy sales Forecast:
NOAA historical actual Heating and Cooling Degree Days are used to develop the normalized Energy sales. Days are divided into three categories: Weekdays, Saturday & Holiday, and Sunday. The LINEST excel function is used on actual Degree Days and Net Energy for each customer class (Residential, Commercial & Industrial) to produce a normal curve. This normal curve is created under three categories: Weekdays, Saturday & Holiday, and Sunday. Under each category we look at Oct (shoulder month), Winter and Summer segments. Finally, the normal degree days are applied to the normal curve to produce the normal MWH consumption for each customer class.

Peak Forecast:
JEA uses SAS to develop the normalize peak forecast. Hourly system load data and max and min temperatures are input into SAS. A non-linear regression analysis is performed on our 10-year historical peaks and temperatures to identify the least squared peaks for each year and use that as our normalized peaks. Some of the assumptions used for this model includes:

- JEA Load = Hourly Load – AUX – CMC Steel & Max and Min temperatures
- The Winter peak is the lowest daily temperature during the months of December, January and February
- The Summer peak is the highest daily temperature during the months of July, August and September
- Two of the parameters used in the non-linear regression analysis are highest and lowest record temperatures in Jacksonville of 103°F for summer and 16°F for winter

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.

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.

A customer-sited renewable forecast was created by Black and Veatch Consulting Group and included in JEA's 2024 TYSP forecast. JEA removes from the total load forecast all seasonal, coincidental non-firm sources and adds the different sources of additional demand, mentioned in question 7, to derive a firm load forecast. The customer-site renewable forecast contributed to the decrease in the Firm Load Forecast.

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.

For 2024, the Customer-Site renewable load represents 0.002% of the forecasted total peak demand in the winter and 0.07% of the forecasted total peak demand in the summer. The AAGR of Customer-Sited Renewable load during the TYSP period is 28%.

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.

	Residential	Non-Residential
2024	585	31
2025	1,188	52
2026	1,240	54
2027	1,340	58
2028	1,607	74
2029	2,019	103
2030	2,570	141
2031	3,266	189

2032	4,122	246
2033	5,156	313

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.

    JEA included Plug-in Electric Vehicle (PEV) in the forecast used for this TYSP. JEA's forecasted AAGRs for PEV winter is 19.02%, summer coincidental peak demand is approximately 29.8% and total energy are approximately 19.02% percent during the TYSP period. JEA will continue to monitor PEV technology and its impact on JEA's load forecast.

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

    JEA did not make any changes or modifications from the previous reporting period. JEA will continue to monitor PEV technology and its impact on JEA's load forecast.

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

    There is no major driver that JEA can see at this time. JEA sees the adoption in its service territory driven by the desired of TESLA ownership. TESLA ownership represents a 57.5% of Duval County total PEV registrations in 2023. Chevrolet Bolt and Volt combined are the next highest ownership in Duval County and representing 4% of the total PEV registrations.

    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.

    The PEVs demand and energy forecasts are developed using the historical number of PEVs in Duval County obtained from the Florida Department of Highway Safety and Motor Vehicles and the historical number of vehicles in Duval County from the U.S. Census Bureau.

    JEA forecasted the number of vehicles in Duval County using multiple regression analysis of historical and forecasted Duval population, median household income and number of households from Moody's Analytics. The forecasted number of PEVs is modeled using multiple regression analysis of the number of vehicles, disposable income from Moody's Analytics, the average motor gasoline price from the U.S. Energy Information Administration (EIA) Annual Energy Outlook (AEO), and JEA's electric rates.

The usable battery capacity (85 percent of battery capacity) per vehicle was determined based on the current plug-in electric vehicle models in Duval County. The average usable battery capacity per PEV is calculated using the average usable battery capacity of each vehicle brand and then assumes the annual growth of usable battery capacity per PEV by using the historical 5-year average of 0.001 kWh. Similarly, the peak capacity is determined based on the average on-board charging rate of each vehicle brand and the forecast peak capacity per PEV grows by 0.01 kW per year.

The PEVs peak demand forecast is developed using the on-board charging rate for each model, the PEVs daily charge pattern and the total number of PEVs each year. The PEVs energy forecast is developed simply by summing the hourly peak demand for each year.

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

Most public charging stations installed within JEA's service area will be issued a construction permit by the City of Jacksonville before the installation. Part of the permitting process includes assigning a unique prefix to the address that denotes an electric vehicle charging service connection. The design plans will be processed and approved by JEA engineers before any new electric services are added. JEA has access to data from 24 public charging stations that were installed several years ago at local companies that agreed to serve as site hosts. Public charging stations are located behind customer meters. Public charging station electric usage is monitored and billed based on the customers' electric usage as monitored by the utility-owned electric meters.

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.

   JEA does not have any technology in placed 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.

At this time, no electric facility upgrades to the JEA's distribution system have been completed due to the PEVs being a significant contributing factor. JEA's continues to monitor our existing facilities to identify any future capacity needs that may be required to serve or backup significant

PEV demand within the TYSP period. This includes large commercial EV charging services as well as individual (residential) charging.

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.
(Please see excel file)

    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.

       JEA has not identified significant changes to its service territory.

    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.

       JEA has not explicitly accounted for the provisions of the IRA in its estimates of electrification as more information about the relevant provisions of the IRA and potential impact on energy requirements associated with electrification becomes available, JEA will incorporate such information into its electrification estimates.

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.

    JEA operates three programs that are directly related to PEVs and charging infrastructure deployment in the service area.

    (1) JEA Drive Electric Program (DEP) is a residential program that focuses primarily on education and awareness. Website tools are used to educate customers about the basics of EV driver, charging, and available rebates. At the program website customers are encouraged to engage in a one-on-one conversation with an EV Expert to discuss the benefits of electric vehicles as well as to explore electric vehicle 'fit' as it compares to the caller's driving habits. Other features of the website include an EV Locator Tool, a searchable database of PEV stock that is currently available in the region. With the locator tool customers can locate and compare new and used PEVs that are available for sale and do comparison shopping for PEVs on the web, in one place. Customers that own a PEV and would like to install Level 2 charging at home may take advantage of the program rebate available to offset part of the wiring costs of Level 2 charger installation. The rebate covers 15% of the installation costs (excluding the PEV charger) up to a maximum of $300.00. Residential customers that participate in the wiring rebate offer are required to enroll in the passive off-peak charging part of the DEP. For PEV owners JEA offers a voluntary off-peak charging benefit of $7.00 per month if the customer only charges the enrolled vehicle during the off-peak hours: Weekdays 10:00 PM – 6:00 AM, Weekends – Anytime. Compliance with the charging hours is monitored through the customers' whole home AMI meters. Incentives are paid quarterly. EVents are held multiple times per year in the community to raise awareness of the benefits of EV ownership, and to allow prospective EV owners to interact directly with current EV owners, dealerships, and charging companies. At the EVents customers may inspect, ride and drive multiple PEVs in a low stress environment. EVents sponsored by JEA DEP are some of the biggest in the Southeastern United States, and are co-sponsored by stakeholders like the North Florida Transportation Planning Organization, North Florida Clean Fuels Coalition, Jacksonville Transit Authority, North Florida Green Chamber of Commerce, Sierra Club and others. Multiple dealerships bring current PEV models for demonstrations and to allow customers the opportunity for test drives.

(2) JEA Fleet Electrification Program (FEP) is a program for commercial and industrial customers. The FEP focuses on education and awareness largely through a robust online Total Cost of Ownership (TCO) Tool. The free online tool takes customer inputs on current fleet makes, models, and usage in a simple and easy-to-use format. Comparison with a generic electric vehicle replacement or a specific electric vehicle is performed by the software to calculate the TCO of the current fleet vehicle and the PEV replacement. The robust application produces an estimate of costs and benefits derived from switching to PEVs that includes GHG and other air quality pollutant reductions associated with the change. The TCO calculator is a free tool that is designed to educate and facilitate small and less sophisticated fleets as they explore switching to electric fuel. We call this level of service Service Level 1, which is for fleets with less than five vehicles or fleets that already possess sufficient PEV expertise to develop their own Fleet Conversion Plans (FCP). For fleet customers that need more assistance JEA offers Service Level 2, a fleet advisory service that includes development of a comprehensive Fleet Conversion Plan. FCPs evaluate the current fleet operations and site facilities, determine PEV replacements, determine charging requirements, power requirements, infrastructure requirements, fuel costs, maintenance costs and other parameters to develop a high-quality plan that is actionable by the fleet to convert over time to electric fuel. Of particular value to the customer fleet and the utility is that these conversations about infrastructure availability, timeline and costs happens early in the decision-making process.

Service Level 1 and Service Level 2 customers that require electric service upgrades may qualify for some make-ready funding from JEA when they implement the FCP and install electric infrastructure for powering their electric fleet vehicles. Electric Vehicle Charging Equipment (EVSE) that is installed by commercial and industrial customers may qualify for rebates from the JEA Electrification Rebate Program.

(3) JEA Electrification Rebate Program (ERP) provides commercial and industrial customers rebates for the purchase of certain electric devices, including Level 2 and Level 3 EVSE. EVSE purchased for public, private, and fleet use is eligible for rebate under the ERP. EVSE for use at multifamily apartments, public spaces, commercial, retail, and parking facilities are typically eligible for rebates under the ERP.

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

   Yes, all programs contain significant educational and marketing components designed to engage customers about the economic and environmental benefits of PEV ownership.

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.

   Yes, all programs gather customer feedback for the purposes of increasing effectiveness and customer engagement. Customer surveys are conducted, and the DEP has a social media presence on two popular applications.

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.

    JEA has successfully used outputs from customer AMI meters to detect Level 2 charging events. Those events have been used to plot sites where Level 2 charging events have taken place, and to visually display clustering on a map. Sequential map studies indicate general spreading into more broad areas of the service area and increased concentration in certain areas within the Southeast, Northeast and Southwest quadrants of the service area.

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.

    JEA acknowledges that these provisions are likely to increase the number of PEV and the adoption rate but cannot predict impacts of these legislative changes on the automobile market in Northeast Florida.

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

    At this time, there are not enough PEVs in JEA's service territory to significantly influence actual utility peak demand. However, encouraging off-peak charging is essential to utility efficiency as PEV ownership increases.

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

    JEA is working on a project with the Electric Power Research Institute (EPRI) that will monitor telematics data from 400 local PEVs. The study will generate data on vehicle driving and charging behavior as well as battery state of charge information that will be helpful as the utility seeks to understand the impacts of PEV charging on the grid.

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.

    Looking at past data, we can confirm some expected trends in PEV charging behavior, for instant, charging the day before a hurricane is expected to hit land and the day before Mothers' Day.

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.
    (Please see excel file)

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.
    (Please see excel file)

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.
    (Please see excel file)

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.
    (Please see excel file)

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.

(Please see excel file)

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.
(Please see excel file)

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.
(Please see excel file)

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

       JEA has identified a potential JEA-owned site to build a 1x1 advanced-class CCCT. The site is currently being evaluated. Further updates will be presented in subsequent TYSPs as the site evaluation process is finalized.

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.
(Please see excel file)

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.
(Please see excel file)

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

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?

On January 31, 2023, JEA released a solicitation for the development of approximately 300 MWAC of solar or solar plus energy storage systems on JEA-owned parcels, with the consideration of both PPA and JEA ownership options. Ownership models were evaluated and compared with PPA with results favoring PPA, due to economics. On November 7th 2023, the JEA Board approved the award and negotiation of up to 280 MWAC of PPAs to Florida Renewable Partners. Resultantly, JEA has no planned utility-owned renewable resources at this time.

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.

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.
(Please see excel file)

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.

JEA's Integrated Resource Plan (IRP) results consistently identified a 1x1 advanced-class combined cycle combustion turbine (CCCT) configuration in the 2030 timeframe as part of the least-cost resource plan across the majority of scenarios and sensitivities. Modeling results show that the retirement and replacement of JEA's Northside Unit 3 with an efficient, advanced-class CCCT provides JEA with a new cost-effective resource. This new resource will provide reliable dispatchable power, allow for more efficient use of natural gas, reduces system CO_2, NO_x and SO_2 emissions, provides support to reliably integrate more renewable energy into the JEA system and will also avoid costly upgrades that would otherwise be necessary to extend the life of the 46-year-old unit. It should be noted that in order to maintain reliable operation of JEA's system, Northside Unit 3 unit cannot be retired until a replacement unit has achieved commercial operation. Due to permitting requirements associated with the Florida Power Plant Siting Act (PPSA), specifically Determination of Need and Site Certification (environmental permitting) for a CCCT, Northside Unit 3 may need to continue to operate until the earliest commercial operation date of a new CCCT resource, which is estimated to be in the 2030 timeframe. Development considerations, such as permitting delays, supply chain difficulties, or construction delays, could impact the earliest commercial operation date.

For the purposes of planning, all planned renewable units are assumed to be PPA and not utility owned.

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.
(Please see excel file)

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.

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.
(Please see excel file)

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.
(Please see excel file)

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.
(Please see excel file)

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.
(Please see excel file)

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
(Please see excel file)

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.
(Please see excel file)

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

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.
(Please see excel file)

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.
(Please see excel file)

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

The Florida Renewable Partners projects (Forest Trail Solar, Caldwell Solar, Miller Solar, Peterson Solar) are nearing completion of contract negotiations, with site diligence underway.

The Florida Municipal Power Agency project is undergoing site studies.

The remaining projects are planned in an effort to meet JEA's Clean Energy goal of 35% clean energy by 2030. JEA expects to solicit additional solar in late 2024 to help meet the goal.

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?

Upon conclusion of JEA's solar solicitation released January 31, 2023, the JEA Board of Directors approved the award and negotiation of up to 280 MWAC of solar and energy storage systems to Florida Renewable Partners (FRP), for the 55 MWAC Forest Trail, 74.9 MWAC Miller, 74.9 MWAC Caldwell, and 74.9 MWAC Peterson solar facilities. After preliminary site diligence, project layouts were optimized, and the Forest Trail facility was reduced from 55 MW to 50 MW. Resultantly, the total portfolio reduced from 280 MWAC to 275 MWAC. The Forest Trail, Miller, and Caldwell facilities are expected to commission December 31, 2026, while Peterson is scheduled to commission September 30, 2027.

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.
(Please see excel file)

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.
(Please see excel file)

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

       N/A

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?

    N/A

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.
    (Please see excel file)

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

    JEA's Distributed Generation (DG) Policy allows customers to contribute to the production and consumption of renewable energy. The DG Policy allows customers with onsite renewable generation to produce energy to meet their needs. In the event of a surplus of production, JEA credits this excess energy at the fuel rate. In addition, JEA has launched a customer program that provides tools to ensure informed decision-making about potential solar installations by explaining such things as project costs, timing, and the potential effect on their electric bill.

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.

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.

    Historically, JEA does not consider solar PV to contribute to either seasonal peak; however, as part of JEA's Integrated Resource Plan (IRP) studies, a 20% firm summer capacity for solar PV was utilized. JEA based the 20% firm summer capacity on a study on the historical solar output of JEA's oldest solar facility, Jacksonville Solar. The solar data was generated during the hours of when JEA's system peaks typically occur, with the peaks being above 2,500 MW and weather conditions showing some cloud-cover. As JEA obtains more data from the existing solar farms, a minimum of 5 years' worth, JEA will perform a new study to determine the firm summer capacity for solar.

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.

       Since 2017, JEA has offered residential and small/mid-sized commercial customers the opportunity to contribute towards funding solar adoption by purchasing renewable energy through its SolarSmart rider. Participants pay a fixed fuel rate compared to JEA's variable monthly fuel rate. Customers can select any percent (1% to 100%) of their energy to be allocated from JEA utility-scale solar resources. The renewable energy is produced by six utility-scale solar facilities inside JEA's service territory that were installed between 2017 and 2019. JEA removes RECs from inventory on behalf of the SolarSmart customers.

In addition, SolarMax is a rider offering for JEA's largest commercial and industrial customers with a minimum consumption of 7 million kWh. The rider was designed around JEA utility-scale solar farms which are not yet operational and are currently being fulfilled via solar PPAs and associated RECs. The rider allows large business customers to choose to have up to 100 percent of their energy needs met by solar power. Companies select either a five or ten-year contract term. JEA retires the RECs in NAR on behalf of the SolarMax customers. The SolarMax rider replaces the fuel charge with a solar price. The program is currently closed to new customers as JEA continues to explore other innovative programs to offer.

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.

    Longer duration energy storage continues to be a near term industry goal, as current technologies prove to be geographically limited and/or financially infeasible. Additionally, other technologies like solid state batteries and sodium ion batteries are proving to be more of a viable rival for lithium-ion technologies when it comes to energy density, raw material availability, and charge rate. However, these technologies still need to innovate to reach the level of commercialization of lithium ion.

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.

    JEA does not currently own or operate any battery energy storage facilities in its service territory. The sole utility scale battery energy storage system currently on the JEA grid is a DC-coupled lithium-ion battery system co-located with an existing solar PV facility; it is charged solely by the PV system and discharged to smooth the solar generation.

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).

    JEA's Integrated Resource Plan (IRP) studies considered the use of energy storage as part of the supply-side options, however the determination of the optimal location of these systems lies outside the scope of the current process. Future studies will examine the optimal placement of energy storage technology on the JEA system.

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.

    To date, over 1,189 residential customers have installed customer-owned battery storage systems paired with photovoltaic systems by directly contracting with installation companies.

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.
    (Please see excel file)

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.
    (Please see excel file)

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.

JEA currently has no energy storage pilot programs running; however, a pilot microgrid has been considered. JEA has the opportunity to leverage its relationship with a local university and explore a microgrid installment on their campus. The pilot is still in the conceptual phase with no identified in-service date.

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.

JEA currently has no energy storage technology providing firm capacity from non-firm generation sources.

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.

    There are no ECCR related funds at JEA as this clause is not applicable to the company. JEA does not have R&D projects or research programs funded at this time.

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 CO2 compliance costs are first assumed to have a non-zero value.

       JEA has not modeled any costs for CO2 compliance at this time due to uncertainties of the proposed future requirements and what compliance options JEA would take.

    b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of CO2 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 CO2 compliance costs.

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.

    The current and planned electricity generation mix for JEA will be a key factor in complying with the upcoming CO_2 requirements. In addition to the atmospheric sinks of CO_2 emissions, other avenues of offsetting the carbon footprint are carbon capture from industrial processes or direct capture from ambient air, storage and transport of the captured carbon, the use hydrogen and certain biologic processes. These avenues will require substantial technological advances for meaningful and cost-effective results, with their viability in Florida still uncertain.

The latest Greenhouse Gas (GHG) rule for power plants, proposed on May 23, 2023, represents ongoing efforts by EPA to address CO_2 and other GHG emissions from fossil fuel-fired electric generating units (EGU's) under Section 111 of the Clean Air Act (CAA). This rule will be referred to as the new Power Plant GHG Rule. Following response on the GHG rule are based on the May 23, 2023, proposed rule. The EPA released the pre-publication of its final rule on April 25, 2024, and JEA is in the process of reviewing the latest rule and its impact to JEA.

The Clean Power Plan (CPP), introduced by the Obama EPA in 2015, aimed to set emission guidelines for existing utility units, with individual statewide emission rate goals. However, on October 16, 2017, the Trump EPA proposed to repeal the CPP, rejecting its beyond the fence line, generation-shifting approach.

In its place, the Affordable Clean Energy (ACE) rule was proposed by the Trump EPA in 2018 and published in 2019. The ACE rule replaced the CPP, focusing on regulating CO_2 emissions from electric generating units, particularly coal-fired units, with an emphasis on heat rate improvement (HRI) as the Best System of Emission Reduction (BSER). Florida's electric utilities had already been reducing CO_2 emissions substantially, and the ACE rule aimed to reinforce these reductions while allowing states flexibility in designing their State Plans.

However, the DC Circuit Court vacated the ACE rule on January 9, 2021, and remanded it back to the EPA. Despite this, the court did not reinstate the CPP. The court's decision was challenged, with a group of states and the North American Coal Corporation seeking U.S. Supreme Court review. On October 29, 2021, the Supreme Court agreed to review the appeal of the vacatur of the ACE rule. A decision was reached on June 30, 2022, reversing the previous decision made on January 9, 2021. Following this, the Biden EPA proposed a replacement for the ACE rule on May 23, 2023.

The proposed rule aims to set emission limits for new gas-fired combustion turbines and existing coal, oil, and gas-fired steam generating units. It emphasizes the use of cost-effective technologies such as carbon capture and sequestration (CCS), co-firing with natural gas and/or low-GHG hydrogen for larger units.

The final rule, which includes an exemption for existing gas-fired combustion turbines, was submitted to the Office of Management and Budgets (OMB) on March 1, 2024. Subsequently, on March 26, 2024, the EPA initiated the process of gathering input regarding the regulation of the entire fleet of existing gas combustion turbines under the Clean Air Act 111(d).

EPA has also proposed revisions to the New Source Review (NSR) program through a separate track, distinct from the ACE rule. This initiative involves issuing guidance memorandums and proposing an error correction rule, beginning in November 2019. While these reforms are not anticipated to affect JEA's existing Electric Generating Units (EGUs), they will have implications for any new, modified, or reconstructed EGUs in the future.

<u>New Source Performance Standards (NSPS) Revisions</u>: Concurrent with the CPP, EPA issued NSPS for new EGUs in 2015, i.e., CAA Section 111(b) rules. These standards, codified in Subpart TTTT, were not overturned by the Trump EPA or legal challenges, and were amended in 2018. This rule requires Best System of Emission Reduction (BSER) for affected units as follows:

New or Reconstructed Steam Generating Units. The new Power Plant GHG Rule does not propose new standards for new or reconstructed steam generating units, due to EPA's anticipation that no new coal-fired power plants will be constructed in the foreseeable future. However, the 2015 NSPS for these sources will continue to be upheld. For large units, the proposed emission rate remains at 1,900 pounds of CO_2 per megawatt-hour on a gross output basis (lb CO_2/MWh-gross), while for small units, it stands at 2,000 lb CO_2/MWh-gross.

Large Modifications of Existing Steam Generating Units. For existing coal-fired steam generators undergoing significant modifications, defined as changes resulting in an increase in hourly CO_2 emissions by more than 10% compared to the previous 5 years, the new Power Plant GHG Rule calls for the same guidelines as those for existing long-term coal-fired steam generators.

New or Reconstructed Fossil Fuel-fired Stationary Combustion. The new GHG Rule proposes categories for combustion turbine facilities constructed or reconstructed after its publication date in the Federal Register. Three subcategories are proposed based on function: low, intermediate, and base load. The Best System of Emission Reduction (BSER) for each subcategory is outlined as follow:

- **Low-Load Combustion Turbines:** Utilize lower emitting fuels, such as natural gas and distillate oil, with emissions rates ranging from 120 lb CO_2/MMBtu to 160 lb CO_2/MMBtu
- **Intermediate-Load Combustion Turbines:** BSER includes the following phases:
    - Implementation of highly efficient generating technology for the life of the unit, by finalization of the new GHG Rule
    - Co-firing of low-GHG hydrogen (30% by volume) by 2032.
- **Base-Load Combustion Turbines:** BSER is made up of two phases:
    - Utilization of highly efficient generating technology for the life of the unit, by finalization of the new Power Plant GHG Rule
    - Either of the following pathways:
        - Implementation of CCS to achieve 90% capture of GHG emissions by2035, or
        - Co-firing of low-GHG hydrogen (30% by volume) by 2032, ramping up to 96% by 2038.

These revisions are not expected to impact JEA's existing EGUs, unless they are significantly "modified or reconstructed". JEA's proposed new combined cycle combustion turbine project is expected to be subject to these proposed requirements.

Existing Fossil Fuel-fired Stationary Combustion Turbines (currently exempt). Under the new Power Plant GHG Rule, two BSER pathways would be established for large natural gas-fired combustion turbines (those larger than 300 MW) that are frequently operated, with an annual capacity factor exceeding 50%. These pathways track the second phase of the BSER for new or reconstructed baseload combustion turbines discussed previously.

Existing Fossil Fuel-Fired Steam Generating Units. Under new Power Plant GHG Rule, existing fossil fuel-fired steam generating units, particularly coal-fired units, are categorized based on their operating horizon or planned retirement dates. BSER and degree of emission limitation requirements for each subcategory of coal-fired units are delineated as follow:

- **Long-term Units** (i.e., beyond December 31, 2039)
  - BSER is CCS with 90% capture of CO_2
  - Associated degree of 88.4% reduction in emission rate by 2030.
- **Medium-term Units** (i.e., Ceasing operations between December 31, 2031 and January 1, 2040)
  - BSER is co-firing 40% (by volume) natural gas
  - Associated degree of 16% reduction in emission rate by 2030.
- **Near-term Units** (i.e., Ceasing operations between December 31, 2031 and January 1, 2035 with annual capacity factor limit of 20%):
  - BSER is continued routine operation and maintenance.
- **Imminent-term Units** (i.e., Ceasing operations before January 1, 2032):
  - BSER is continued routine operation and maintenance

.
These categories and BSER pathways reflect varying strategies tailored to the anticipated lifespan and retirement dates of existing coal-fired steam generating units. They aim to balance emissions reduction targets with practical considerations related to unit retirement schedules and technological feasibility.

The EPA claims that, since it promulgated the ACE Rule, the costs of CCS have decreased due to technology advancements as well as new policies including the expansion of the Internal Revenue Code section 45Q tax credit for CCS in the Inflation Reduction Act (IRA); and the costs of natural gas co-firing have decreased as well, due in large part to a decrease in the difference between coal and natural gas prices. As a result, the EPA considered both CCS and natural gas co-firing as candidates for BSER for existing coal-fired steam EGUs. The agency also recognizes that CCS will be most cost-effective for existing steam EGUs that are in a position to recover the capital costs associated with CCS over a sufficiently long period of time. It is uncertain if the geological formations in Florida are suited for CCS wells and construction of a CCS pipeline would take many years. According to PSC, no Florida utility has successfully demonstrated a cost-effective CCS project or co-fired the required volume of low-GHG hydrogen at this time.

- **Natural Gas- or Oil-fired Units.** Under the new Power Plant GHG Rule, existing natural gas- and oil-fired steam generating units are categorized into subcategories based on their capacity factor. Given the limited operation of virtually all units in this category, the proposed BSER for baseload and intermediate load units involves routine methods of operation and maintenance. The associated degree of emission limitation aims to prevent any increase in emission rate from these units. However, for natural gas- and oil-fired steam generating units with low load, which exhibit large variations in emission rates, the new GHG Rule does not propose a specific BSER or degree of emission limitation. This recognition acknowledges the complexities and variations in emission rates among units operating at low loads and underscores the need for further assessment and consideration in addressing emissions from these units within the regulatory framework.

State plans for existing sources. Under the new Power Plant GHG Rule, states are mandated to submit plans to the EPA, establishing and enforcing performance standards for existing sources consistent with the Best System of Emission Reduction (BSER) and associated emissions guidelines set by the EPA. The proposed deadline for submitting these state plans is within 24 months of the effective date of the new GHG Rule, or by June 2026 if the rule is finalized according to EPA's timetable.

These state plans are expected to generally meet or surpass the emission guidelines established by the EPA. They must also address any adoption of less stringent standards based on factors such as remaining useful life, requiring states to demonstrate that achieving BSER is not feasible.

Furthermore, states are obligated to engage in meaningful consultation with communities most affected by GHG emissions and other stakeholders. This engagement ensures that diverse perspectives are considered in the development and implementation of state plans.

Lastly, the new Power Plant GHG Rule allows states to propose the use of measures such as trading and averaging in their plans. These mechanisms provide flexibility for states to achieve emissions reductions while considering economic and practical.

A coalition of 25 states (including Florida) sued the EPA, on January 16, 2024, over a final rule entitled "Adoption and Submittal of State Plans for Designated Facilities: Implementing Regulations Under Clean Air Act Section 111(d)," arguing that the EPA did not have the authority to institute the new rule (implementing regulations). The case is in the US Court of Appeals for the District of Columbia Circuit. Under Section 111(d) of the CAA, states must submit plans to the EPA that provide for establishing, implementing and enforcing performance standards for existing energy sources. The new final rule creates a tighter deadline that states must comply with.

Given the historical pattern of regulatory shifts accompanying changes in political party control of the White House, it's plausible that if the new Power Plant GHG Rule is finalized and withstands legal challenges. A change of administration in November 2024 could lead to its repeal and replacement, similar to the fate of the ACE Rule and the CPP.

Another potential avenue for overturning the new Power Plant GHG Rule is through a Congressional Review Act (CRA) resolution, which could void the rule and allow a future administration to bypass the lengthy rulemaking process required for repeal. The EPA's expectation to finalize the Power Plant GHG Rule in June 2024 could make it vulnerable to such resolutions, as regulations issued toward the end of a Congressional term in a presidential election year are more susceptible to CRA resolutions at the beginning of the subsequent presidential term. While the deadline for issuing rules to avoid being subject to CRA resolutions in the following presidential term is contingent on the congressional calendar of the specific session, it typically falls in May or June. This timeframe underscores the potential significance of the timing of regulatory actions in navigating the political landscape and potential challenges to regulatory stability.

National Emission Standard for Hazardous Air Pollutants (NESHAP): 40 CFR 63 Subpart YYYY (for Combustion Turbines) has also been revised. As a result of the Residual Risk and Technical Review (RTR) in 2020, EPA will not be imposing additional controls. The agency is however proposing revisions to Start-up, Shut-down and Malfunction (SSM) provisions, adding requirements for E-reporting, and lifting of the stay for new gas-fired CTs. These revisions are not expected to impact JEA's existing EGUs, unless they are significantly "modified or reconstructed" or if JEA constructs a new combustion turbine.

Although the rule was stayed in 2004 after EPA received a petition to delist the gas turbines from source categories that would be subject to NESHAP. After the 2020 RTR, EPA decided to keep the stay because an updated petition was received to delist the source category. Then, after Sierra Club petition and EPA's own risk analysis, the stay was lifted on February 28, 2022. However, JEA's "existing" CTs at Northside Generating Station and Brandy Branch Generating Stations are not currently subject to the rule due to their commencement dates. Furthermore, JEA's "new" CTs at Kennedy Generation Station and Greenland Energy Center are not currently subject to the rule because neither facility is a major source of HAPs.(i.e., they do not have a potential to emit more than 10 tpy of any individual HAP or more than 25 tpy of total HAPs.)

40 CFR 63 Subpart UUUUU (a.k.a. Mercury Air Toxics Standard or MATS): On December 27, 2018, EPA signed a proposal regarding the MATS Supplemental Cost Finding and Residual Risk and Technology Review (RTR). It concluded as follows:

- Regulation of HAPs is not "appropriate or necessary," after reconsidering the cost analysis, because the costs "grossly outweigh the quantified HAP benefits."
- Coal- and oil-fired EGUs would not be delisted from 112 regulation, and the 2012 MATS rule would remain in place.
- Regarding the RTR, no revisions to MATS are warranted.
- On April 23, 2023, EPA proposed to strengthen and update MATS to reflect recent developments in control technologies and the performance of these plants. This proposed rule reflects the most significant improvements and updates to MATS since EPA first issued these standards in February 2012. JEA's CFBs at NGS may be required to implement continuous PM emission monitors to demonstrate compliance

with the PM emission standards, in lieu of stack testing, within 3 years from the date of the final rule (expected in May 2024).

- EPA proposed to revise the filterable PM emission standard from 0.030 pounds per million British thermal units of heat input (lb/MMBtu) to 0.010 lb/MMBtu or possibly even lower. Based on historical stack test results, JEA's CFBs should be able to meet the new limits.
- EPA is considering creating a subcategory for acid gas HAP emissions from EGUs burning eastern bituminous coal refuse, which would affect 10 units in PA and WV.

Startup, Shutdown and Malfunction (SSM) SIP Call

On May 2015, EPA issued a SSM SIP call, which is a notice of rulemaking that would require 36 states (including Florida) to revise provisions in their State Implementation Plans ("SIPs") related to air emissions from sources during times of startup, shutdown, and equipment malfunction ("SSM"). Numerous parties have challenged the SSM Action in these consolidated cases. On October 31, 2016, the parties completed merits briefing. Oral argument is scheduled for May 8, 2017 has been cancelled. On April 18, 2017, the DOJ filed a motion for the DC Circuit Court continue the oral argument currently as scheduled to allow the new Administration adequate time to review the SSM Action to determine whether it will be reconsidered. With this continuance, EPA officials in the new Administration are expected to scrutinize the SSM Action to determine whether it should be maintained, modified, or otherwise reconsidered. EPA reversed its decision in 2020 stating that the cost of compliance outweighs the emissions benefits from the regulation. In January 2021, it was again reviewed by the Biden Administration and concluded that it was indeed appropriate and necessary.

On March 1, 2024, the U.S. Court of Appeals for the DC Circuit largely vacated EPA's "SIP Call" that required states to remove from their respective air quality plans regulatory waivers for excess air emissions during periods of SSM. The court held that EPA did not make the necessary or appropriate determination required by the CAA to order states to eliminate automatic SSM exemptions, director's discretion provisions, and affirmative defenses that function as SSM exemptions. The decision resolves, for now, a decades old debate over how the CAA can recognize elevated emissions associated with SSM events.

National Ambient Air Quality Standards (NAAQS):
On June 2, 2010, EPA revised the primary NAAQS for sulfur dioxide (SO2) by implementing a new 1-hour standard of 75 parts per billion (ppb) (calculated as the three-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations). JEA's NGS Unit 3 is permitted to burn No. 6 fuel oil with sulfur content of greater than 1% by weight and could potentially cause or contribute to exceedance of this 1-hour SO2 standard. Based on comprehensive dispersion modeling analyses, it was determined that probability of compliance with the 1-hour SO2 standard is greater than 99.5 percent as long as the unit does not burn No. 6 fuel oil for more than 14 days in a calendar year. Greater number of days of oil operation is also possible with less confidence levels. This determination is conservative since it also assumed all other NGS steam generating units are operating at full load. Furthermore, in order to satisfy the Regional Haze Phase II requirements, JEA applied for additional permit conditions to restrict the sulfur content of No. 6 fuel oil at Unit 3 and no additional controls are expected to be necessary.

EPA finalized the NAAQS Fine Particulate Matter ("$PM_{2.5}$") standards in September 2006. Since then, the EPA established a more stringent 24-hour average $PM_{2.5}$ standard and kept the annual average $PM_{2.5}$ standard and the 24-hour coarse particulate matter standard unchanged. The EPA issued a final $PM_{2.5}$ rule on December 14, 2012, that reduced the annual $PM_{2.5}$ standard from 15 $\mu g/m^3$ to 12 $\mu g/m^3$. The rule left the 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ unchanged. The change in the $PM_{2.5}$ has not resulted in non-attainment designation for Duval County and has not had a material adverse effect on the operations of JEA's generating facilities. The Biden administration is currently reviewing the PM NAAQS as contained in 85 Fed. Reg. 82854 dated December 18, 2020. On January 23, 2023, EPA proposed to retain the daily standard of 35 $\mu g/m^3$ and lower the annual standard from 12 to between 9 and 10 $\mu g/m^3$. Final rule is expected around August 2023. On March 6, 2024, EPA lowered the NAAQS for annual $PM_{2.5}$ to 9.0 $\mu g/m^3$, but retained the daily and secondary standards. This rule will be effective on May 5, 2024. This new NAAQS will only impact JEA if dispersion modeling is required to obtain an air permit.

On October 1, 2015, the EPA revised its NAAQS for ground-level ozone to 70 parts per billion ("ppb"), which is more stringent than the 75-ppb standard set in 2008. The Clean Air Act mandates that EPA publish initial area designations within two years of the promulgation of a new standard (*i.e.*, by October 2017), but allows for a one-year extension if the Administrator determines he "has insufficient information to promulgate the designations." On November 16, 2017, EPA published a final rule establishing initial area designations for the 2015 NAAQS for ozone EPA, designating 2,646 counties (including all counties in Florida) as "attainment/unclassifiable." EPA is designating areas as "attainment/unclassifiable" where one or more monitors in the county are attaining the 2015 ozone NAAQS, or where EPA does not have reason to believe the county is violating the 2015 ozone NAAQS or contributing to a violation of the 2015 ozone NAAQS in another county. States with nonattainment areas will have up to three years following designation to submit a revised state implementation plan ("SIP") outlining strategy and emission control measures to achieve compliance. In November 2017, Duval County was deemed unclassifiable pending acceptable monitoring results expected at the end of 2018. Duval County is projected to be in attainment of the revised standard. On August 14, 2019, EPA published the proposal to redesignate Duval County from unclassifiable to attainment/unclassifiable for the 2015 Ozone NAAQS. In the event that Duval County was to become a non-attainment area, JEA's power plants (e.g., Northside and Brandy Branch) could be required to comply with additional emission control requirements (e.g., increased usage of ammonia in their Selective catalytic reduction/Selective non-catalytic reduction ("SCR/SNCR")) for nitrogen oxides and volatile organic compounds which are precursors to ozone formation. The nature and consequences of a non-attainment designation cannot be predicted at this time. On January 20, 2021, the Biden-Harris administration stated that it will be reviewing the Ozone NAAQS as contained in 85 Fed. Reg. 87256 dated December 31, 2020 (to be completed by December 2023). In April 2022, EPA staff recommended retention of 70 ppb.

On March 14, 2021, EPA withdrew a denial of petition to create a NAAQS for CO_2. At this time, there is a consideration by EPA to create a secondary NAAQS for CO_2.

Regional Haze

EPA and other agencies have been monitoring visibility in national parks and wilderness areas since 1988. In 1999, the EPA announced a major effort to improve air quality in national parks and wilderness areas. The Regional Haze Rule calls for state and federal agencies to work together to improve visibility in 156 national parks and wilderness areas such as the Grand Canyon, Yosemite, the Great Smokies and Shenandoah.

As a result of the second planning period of the rule, JEA reduced the use of Fuel Oil No. 6 and its sulfur content. EPA is now considering revisions to the Regional Haze Rule that would affect the third planning period. The main regional haze Class I Areas affecting Florida are the Okefenokee Swamp, the St. Marks National Wildlife Reguse /Bradwell Bay, the Chassahowitzka NWR, and Everglades NP.

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?
       Yes, This rule will impact JEA if it builds new EGUs, or significantly modifies or reconstructs existing EGUs.

    b. What compliance strategy does the Company anticipate employing for the rule?
       Currently, reviewing the new Power Plant GHG Rule and its potential impacts to JEA is unclear.

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

    d. Will there be any regulatory approvals needed for implementing this compliance strategy? How will this affect the timeline?
       Yes, regulatory and applicability analyses will be done for any proposed new or modified EGUs, and permits will be obtained as needed. The timeline will incorporate the time needed to apply for and receive required regulatory approvals and permits.

    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.
       To be determined

    f. If the answer to any of the above questions is not available, please explain why.
       Since the new Power Plant GHG Rule is still subject to legal challenges at this time, development of timeline/compliance strategy is still in preliminary discussions.

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. N/A
    b. Cross-State Air Pollution Rule (CSAPR). N/A
    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. To be determined
    f. Affordable Clean Energy Rule or its replacement. The new Powerplant GHG Rule To be determined.

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

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.
    (Please see excel file)

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.
    (Please see excel file)

    Air Rules: Close monitoring and reduction of No. 6 fuel oil usage at NGS Unit 3 is required in order to assure continuous compliance with the 1-hour SO2 NAAQS as well as the Regional Haze Round II requirements. Retirements or installation of additional emission controls or continuous emissions monitoring systems may be required as a result of the new Power Plant GHG Rule. Additional costs of renewable energy sources, and/or CO_2 credits may also be required, while tax credits from Inflation Reduction Act may also be possible.

    Water Rules: CWIS has the potential to require upgrades to intake structures on NGS units. The final rule of Section 316(b) of the Federal Clean Water Act was published in the Federal Register on August 15, 2014. JEA does not believe that new standards in the final rule will affect any of its facilities other than NGS. It is possible that new standards may prospectively require upgrades to the system, varying from establishment of existing facilities as the Best Technology Available (BTA), to improvements to the existing screening facilities, to the installation of other cooling technologies. Biological studies were recently concluded for the NGS plant, and a full peer reviewed submittal to the regulatory agency is not expected to be completed until 2025. JEA's current estimate of compliance cost shows a one-time cost anywhere between $1 to 10 million.

    Solid Waste Rules: The CCR rule applies to Area B of the former St. John's River Power Park (SJRPP) and does not apply to management of byproducts at Northside Generating Station as long as it continues to burn a fuel mix with less than 50 percent coal. The operating cell within Area B of SJRPP was closed and closure construction was completed in

January 2022 in accordance with specified performance standards. The facility will continue to comply with the monitoring requirements of the rule in accordance with the post-closure and corrective action plans for groundwater. JEA's current estimate for corrective measures and long term closure near $5 million. In May 2023, EPA proposed the Legacy Impoundment rule to regulate coal ash of inactive surface impoundments at inactive facilities and would establish groundwater monitoring, corrective action, closure and post-closure care requirements. The proposed rule would apply to the closed Area A landfills (1&2) at SJRPP. Implementation of the proposed rule is not estimable at time and will be dependent on the final rule and groundwater monitoring results.

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.
(Please see excel file)

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.
N/A

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.
(Please see excel file)

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

JEA compares its forecast to other independently produced forecasts at the commodity level excluding transportation, some commodity prices are compared with monthly granularity, while others are compared on an annual basis. Transportation forecasts tend to be too generic for JEA's specific circumstances, but JEA does consider rail, tanker, and dry bulk cargo freight rates and forecasts from various sources to judge general trends within the respective industries.

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

Coal prices in nominal dollars are expected to increase during the forecast period. Delivered Colombian coal is forecasted to be priced lower than delivered domestic coal during the study period. Over the long term, coal consumption in the electric power sector is forecasted to continue to decline as a result of increased competition with natural gas and renewable generation.

b. Natural Gas

The price of natural gas is projected in nominal dollars to increase throughout the forecast period. Natural gas is used as a primary fuel at four of JEA's existing electric generation facilities. Over the forecast period, the EIA assumes that there will be sufficient availability of natural gas for JEA from continued growth in new oil wells that produce associated natural gas and new unconventional gas wells.

c. Nuclear

N/A

d. Fuel Oil

JEA maintains diesel inventory at Brandy Branch, Kennedy, Greenland, and Northside. Additional diesel supply is purchased from time to time in the open market as needed. The price of diesel fuel oil is projected in nominal dollars to increase throughout the forecast period and remain higher than the price of natural gas.

e. Other (please specify each, if any)

JEA uses circulating fluidized bed technology in Northside Generating Station Units 1 and This technology allows JEA to use a blend of petroleum coke and bituminous coal in these units. During the planning period, JEA expects the petroleum coke market to typically trade at a discount to coal.

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

Actual 2023 delivered fuel prices came in lower for all the fuel types that JEA consumes compared to the 2023 fuel price forecast. On a percentage basis, prices for natural gas and coal decreased by the largest margin.

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.

    JEA's process for preparing the Utility's 2024 TYSP was relatively similar to that used for the 2023 TYSP. As was the case last year, the EIA's annual publication of the Annual Energy Outlook was not released in time for use in the TYSP. NYMEX exchange futures prices were updated to capture the latest price movements.

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

    JEA utilizes firm transportation on Florida Gas Transmission, Southern Natural Gas, and SNG Elba Express/Cypress pipeline. In addition, JEA has a firm long term agreement for gas supply delivered to Jacksonville using Florida Gas Transmission and Southern Natural Gas pipelines. To deliver natural gas to JEA's Greenland Energy Center, JEA has a long-term contract with SeaCoast Gas Transmission, LLC. The various transportation contracts allow JEA the ability to access natural gas from diverse supply regions.

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.

    At this time, JEA does not foresee any existing or planned natural gas pipeline expansion projects having a direct substantial effect on the natural gas volumes that JEA is able to receive. With several natural gas pipeline projects planned in the United States, JEA may experience more favorable natural gas pricing as a result of some of those pipelines providing additional takeaway capacity from the supply regions.

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.

    EIA's projected increase in U.S. LNG export capability is supported by differences between international and domestic natural gas prices. Further increases in U.S. LNG export volumes could potentially reduce the quantity of natural gas available and as a result cause an increase in domestic natural gas prices. Despite projected increases in natural gas export volumes, JEA expects sufficient gas supply will be available to meet JEA's needs.

    JEA has a long-term natural gas supply contract that allows the natural gas to be sourced from the LNG facilities of SNG at Elba Island in Savannah, GA. Given reduced LNG imports and physical changes at that facility, domestic supply will be utilized in support of the agreement.

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

    At this time, JEA does not plan to utilize firm natural gas storage.

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.

    JEA's fuel procurement process insures that potential fuel suppliers compete with one another for the opportunity to deliver coal to JEA facilities. The competitive process results in low delivered costs for JEA.

    JEA's Northside Generating Station has water access to accommodate coal deliveries. Domestic coal suppliers using rail to barge logistics and international coal suppliers using ocean vessels compete to provide JEA with coal deliveries to NSGS. JEA currently has limited rail access at NSGS.

    JEA has and will continue to solicit coal bids in a competitive process and will make fuel selections based on prudent utility evaluations.

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.

    At this time, JEA does not expect to make any changes in coal handling, blending, unloading, and storage for the coal generating units.

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.

    N/A

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

    N/A

89. **[FPL Only]** Please refer to FPL's Response to Staff's First Data Request (No. 90) for the 2023 Ten-Year Site Plan, received on May 1, 2023. Have FPL's plans to only self-consume the hydrogen produced at the Okeechobee Clean Energy Center changed? Please explain.

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.

    From a Generation facilities perspective, we have in-place a documented and controlled Freeze Protection/Winterization plan and check list processes at both our solid fuel (NGS) and CT/Combined Cycle plants. The plant will only "activate" prior to a forecasted freeze. Procedures are verified annually prior to the first freeze, but do not "activate" until a freeze is imminent. JEA also has a Preventive Maintenance Work Request (PWO) that automatically activates on an annual basis, prior to the activation and completion of the plans and check lists, to review and modify the winterization requirements as needed.

    Procedures include:

    - Northside Generating Station - Operations N00 FP – Freeze Projection Procedure Ver. 3

    - CT's/Combine Cycle Facilities:
        - Brandy Branch Generating Station - BBGS Freeze Protection Procedure Rev. 5
        - Greenland Energy Complex – GEC Freeze Protection Procedure Rev. 2.1
        - Kennedy Generating Station – KGS Freeze Protection Procedure Rev. 1

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

    In 2023, JEA secured an external SME contractor to conduct a full operational evaluation and critical operating system mitigation matrix for all the generating stations. This mitigation matrix provided us with a list of recommended cold-weather improvements for consideration. Implementation of the recommendations is dependent on the complexity, cost and supply chain issues associated with the recommended changes. JEA will continue to remain compliant with the latest NERC standard related to winterization (EOP-11-2, EOP-12) including:

    - Annual calculation of the Extreme Cold Weather Temperature
    - Annual Cold Weather Unit-Specific Readiness Plan Training
    - Annual inspection and maintenance of freeze protection measures

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

For the existing JEA power plants, flood mitigation planning, and response is included in the Electric Production Storm Response Procedure of each facility. The specific actions required are dependent on the location of the plant, equipment at risk and the probability of flooding during different storm intensities.

In general, flood mitigation for power plants consists of:

1) Installing flood curtains at doors and access points
2) Sandbagging
3) Removing and relocating equipment out of potential flood areas
4) Installation and operations of temporary portable submersible pumps
5) Control room relocation / renovation above potential storm surge – (project ongoing at KGS)

Flood mitigation for substation consists of:

1) Sandbagging
2) Installation and operations of temporary portable submersible pumps

New Plants will be designed using readily available storm and flood data with respect to the proposed site and equipment elevations are designed to meet all our requirements for storm level and severity events.

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.

For Hurricane Ian, JEA had a total of 162,940 customers impacted out of its approximate 506,284 customer base during the 3 day event. JEA worked to restore power as the storm took place when safe to work. The maximum number of customers out during the period was 21,440 customers on 9/29/22 @0752. The retail sales where lower these days due to the weather which is typical on stormy days. Peak load reduction due to the storm was estimated to be 700 MW mostly due to the temperature decrease for load demand not customer outages. Estimated impact due to load loss is 130MW most commercial load which shutdown for safety

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

JEA did not include the impact of the major storm mentioned above to the Energy sales and Demand Forecast.

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

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.

JEA has not made any changes to their generation units for extreme weather planning as a result of a FERC Order within the last two years. Where necessary, operating procedures were modified to directly reflect FERC order requirements.

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.

N/A

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.

JEA did not include projections of annual energy and demand associated with data centers.

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?

JEA has received service inquiries from data centers. JEA is currently evaluating such inquiries and the ability to serve the needed demand.

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.

JEA anticipates that it will need to seek or identify new resources to serve potential data center demand. Some of the concerns JEA foresees include:

- To have sufficient reliable resources to meet the new demand and the required 15% reserve margin.
- The ability to get approval to build new generation by the PSC to serve the new data center facilities.

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

JEA is currently not serving any large data centers.

98. **[Non-FEECA Utilities Only]** For any data centers operating in the Utility's service territory and receiving electric service from the Utility, please describe the current number of the data centers, by type (e.g., colocation, enterprise, cloud, edge, and micro data, etc.) and, for each data center, the customer class served as well as the estimated load served (summer/winter demand and energy).

99. **[Non-FEECA Utilities Only]** With respect to the load forecast included in the Utility's 2024 Ten-Year Site Plan to be filed in April 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 ha ve been made, what does the Utility believe is the likely pattern of load growth associated with this industry within its service territory?

100. **[Non-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 your utility's service territory. Please also specify how has, and how does, your utility anticipate responding to such issues or concerns.

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Financial Assumptions
Base Case

AFUDC RATE		4	%
CAPITALIZATION RATIOS:			
	DEBT	100	%
	PREFERRED	0	%
	EQUITY	0	%
RATE OF RETURN			
	DEBT	4	%
	PREFERRED	0	%
	EQUITY	0	%
INCOME TAX RATE:			
	STATE	0	%
	FEDERAL	0	%
	EFFECTIVE	0	%
OTHER TAX RATE:		0	%
DISCOUNT RATE:		4	%
TAX			
DEPRECIATION RATE:		N/A	%

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
2024	3	3	3	3
2025	3	3	3	3
2026	3	3	3	3
2027	3	3	3	3
2028	3	3	3	3
2029	3	3	3	3
2030	3	3	3	3
2031	3	3	3	3
2032	3	3	3	3
2033	3	3	3	3

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Question No. 4

Date	Hourly System Load (MW)																							
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Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2023	1	2326	0	2326	16	8	48
	2	1813	0	1813	24	16	76
	3	2049	0	2049	27	18	78
	4	2081	0	2081	5	18	76
	5	2230	0	2230	16	17	79
	6	2598	0	2598	27	18	87
	7	2699	0	2699	21	17	88
	8	2756	0	2756	7	17	87
	9	2463	0	2463	6	17	82
	10	2057	0	2057	5	17	79
	11	2043	0	2043	29	8	47
	12	2016	0	2016	20	8	48
2022	1	2529	0	2529	30	8	40
	2	2211	0	2211	10	8	51
	3	1862	0	1862	13	10	42
	4	2007	0	2007	26	17	73
	5	2452	0	2452	19	17	81
	6	2728	0	2728	23	17	87
	7	2598	0	2598	7	16	86
	8	2612	0	2612	2	17	85
	9	2574	0	2574	6	18	85
	10	1999	0	1999	13	17	76
	11	1899	0	1899	1	17	75

	12	2599	0	2599	25	9	34
2021	**1**	2362	0	2362	19	8	47
	2	2532	0	2532	4	8	46
	3	2003	0	2003	26	18	76
	4	2052	0	2052	29	18	74
	5	2372	0	2372	4	18	81
	6	2432	0	2432	15	16	83
	7	2511	0	2511	22	17	84
	8	2498	0	2498	31	17	83
	9	2305	0	2305	2	15	82
	10	2136	0	2136	1	17	77
	11	1859	0	1859	30	8	51
	12	1803	0	1803	23	9	51
Notes							
(Include Notes Here)							

TYSP Year 2024
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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	13,467	200		3.91	1.02	45
2025	16,526	232		5.00	1.31	58
2026	19,881	266		6.20	1.62	72
2027	23,577	302		7.52	1.96	88
2028	27,665	341		8.99	2.35	105
2029	32,169	384		10.61	2.77	123
2030	37,114	430		12.38	3.23	144
2031	42,493	479		14.32	3.74	167
2032	48,347	532		16.43	4.29	191
2033	54,689	589		18.72	4.89	218
Notes						
(Include Notes Here)						

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[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										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
Notes										
JEA has not had a Demand Response program										

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[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										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
Notes										
JEA has not had a Demand Response program										

TYSP Year 2024
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[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							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
Notes							
JEA has not had a Demand Response program							

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	0.08	19	3100	N/A	N/A	N/A
2025	0.02	21	300	N/A	N/A	N/A
2026	0.02	20	800	N/A	N/A	N/A
2027	0.01	19	0	N/A	N/A	N/A
2028	0.02	18	400	N/A	N/A	N/A
2029	0.01	18	0	N/A	N/A	N/A
2030	0.00	17	0	N/A	N/A	N/A
2031	0.00	21	0	N/A	N/A	N/A
2032	0.01	20	300	N/A	N/A	N/A
2033	0.01	20	0	N/A	N/A	N/A

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
Brandy Branch GT	1	5.51%	1.07%	0.22%	2.92%	94.16%	96.02%	10,756	10,495
Brandy Branch CC	2,3,4	6.76%	4.38%	1.22%	1.87%	90.63%	93.75%	6,880	6,476
GEC GT	1	0.76%	3.25%	2.53%	3.07%	96.65%	93.68%	11,104	10,698
GEC GT	2	1.45%	2.57%	1.19%	3.07%	97.29%	94.36%	10,993	10,700
Kennedy GT	7	9.84%	1.75%	4.45%	3.07%	84.15%	95.18%	11,532	10,449
Kennedy GT	8	2.59%	2.71%	0.71%	3.15%	96.60%	94.14%	11,286	10,755
Northside	1	7.37%	8.21%	1.28%	4.61%	90.68%	87.17%	14,309	9,984
Northside	2	11.88%	9.77%	2.26%	4.87%	81.77%	85.36%	10,555	9,544
Northside	3	10.83%	8.99%	2.53%	5.20%	82.44%	85.81%	11,316	10,514
Northside GT	33	7.15%	4.21%	11.78%	4.87%	79.26%	90.92%	18,625	20,308
Northside GT	34	0.00%	3.31%	2.01%	4.88%	87.73%	91.81%	20,503	19,903
Northside GT	35	1.26%	4.05%	2.37%	4.93%	91.15%	91.02%	22,369	19,848
Northside GT	36	0.80%	3.34%	9.37%	5.11%	86.97%	91.56%	21,634	20,108

NOTE: Historical - average of past three years
Projected - average of next ten years

TYSP Year 2024
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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	(%)
Brandy Branch	GT1	Duval	GT	NG	5	2001	150.5	192.7	149.9	191.2	149.9	191.2	14.54
Brandy Branch	CT2	Duval	CT	NG	5	2001	190.5	212.2	189.7	211.7	189.7	211.7	80.38
Brandy Branch	CT3	Duval	CT	NG	10	2001	190.5	212.2	189.7	211.7	189.7	211.7	82.85
Brandy Branch	STM4	Duval	CA	WH	1	2001	210	225	200	216.1	200	216.1	82.60
Greenland Energy Center	GT1	Duval	GT	NG	6	2011	150.5	192.7	149.9	191.2	149.9	191.2	20.35
Greenland Energy Center	GT2	Duval	GT	NG	6	2011	150.5	192.7	149.9	191.2	149.9	191.2	17.12
J. D. Kennedy	GT7	Duval	GT	NG	6	2000	150.5	192.7	149.9	191.2	149.9	191.2	5.74
J. D. Kennedy	GT8	Duval	GT	NG	6	2009	150.5	192.7	149.9	191.2	149.9	191.2	9.39
Northside	1	Duval	ST	PC	5	2003	310	310	293	293	293	293	14.51
Northside	2	Duval	ST	PC	4	2003	310	310	293	293	293	293	50.48
Northside	3	Duval	ST	NG	6	1977	540	540	524	524	524	524	37.50
Northside	GT3	Duval	GT	DFO	1	1975	50.4	62	50	61.6	50	61.6	0.17
Northside	GT4	Duval	GT	DFO	1	1975	50.4	62	50	61.6	50	61.6	0.16
Northside	GT5	Duval	GT	DFO	12	1974	50.4	62	50	61.6	50	61.6	0.11
Northside	GT6	Duval	GT	DFO	12	1974	50.4	62	50	61.6	50	61.6	0.09
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	(%)
Advanced-Class 1x1 CC	TBD	Jacksonville, FL	CCCT	NG	January	2030			576	669.8	576	669.8	50.0
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	(%)
NONE													
Notes													
(Include Notes Here)													

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	(%)
NONE													
Notes													
(Include Notes Here)													

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			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
	2021			
	2022			
	2023			
Projected	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
	2031			
	2032			
	2033			
Notes				
N/A				

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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				
Combined Cycle Unit Additions				
Steam Turbine Unit Additions				
Notes				
N/A				

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
Brandy Branch	GT1	GT	NG	28.98	11.99	5.73	7.16	5.74	5.32	4.25	3.45	3.35	3.54	3.69
Brandy Branch	CT2, CT3, STM4	CC	NG	74.33	86.99	87.29	86.29	80.22	88.31	89.02	67.08	71.51	70.00	69.60
GEC	GT1	GT	NG	18.89	33.55	24.99	26.27	28.83	21.91	24.54	13.25	12.47	12.25	12.46
GEC	GT2	GT	NG	15.28	35.09	24.04	26.04	28.88	23.65	24.66	12.40	12.63	12.03	11.89
Kennedy	GT7	GT	NG	7.00	20.45	11.89	12.86	13.00	10.25	9.62	7.22	7.14	7.63	8.26
Kennedy	GT8	GT	NG	4.60	15.83	9.05	10.41	8.30	8.40	7.34	4.69	5.02	6.35	5.09
Northside	1	ST	PC	25.82	0.99	0.51	0.70	0.25	0.30	0.54	0.31	0.24	0.25	0.22
Northside	2	ST	PC	37.14	1.16	0.42	0.73	0.24	0.33	0.32	0.25	0.24	0.23	0.23
Northside	3	ST	NG	38.12	1.19	0.38	0.68	0.23	0.29	0.47	0.34	0.19	0.24	0.20
Northside	GT3	GT	DFO	0.11	1.38	0.42	0.67	0.24	0.35	0.45	0.28	0.24	0.25	0.25
Northside	GT4	GT	DFO	0.14	0.00	19.26	30.44	14.57	15.74	16.84	4.50	1.21	0.00	4.03
Northside	GT5	GT	DFO	0.09	31.68	42.04	39.04	54.75	38.40	33.25	7.02	7.38	5.83	13.98
Northside	GT6	GT	DFO	0.06	42.88	38.41	35.56	31.07	25.17	26.78	0.00	0.00	0.00	0.00
Advanced-Class 1x1 CC	TBD	CCCT	NG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.43	61.39	62.52	61.69
Notes														
Advanced-Class 1x1 CC expected in service date 1/1/2030														

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
Northside 3	NG/FO6	524	Jul-77	Combined Cycle	Resulting unit size too large
Kennedy CT 7	NG/FO2	150	Jun-00	Combined Cycle	
Kennedy CT 8	NG/FO2	150	Jun-09	Combined Cycle	
Brandy Branch CT 1	NG/FO2	150	May-01	Combined Cycle	
GEC CT 1	NG	142	Jun-11	Combined Cycle	
GEC CT 2	NG	142	Jun-11	Combined Cycle	
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
Northside 1	PC	293	May-03	NG	
Northside 2	PC	293	Apr-03	NG	
Northside	GT3	50	Jan-75	NG	
Northside	GT4	50	Jan-75	NG	
Northside	GT5	50	Dec-74	NG	
Northside	GT6	50	Dec-74	NG	
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
Notes					
NONE					

Nominal, Firm Purchases

Year		Firm Purchases $/MWh	Firm Purchases Escalation %
HISTORY:			
	2021	89.97	2.24%
	2022	67.65	-24.81%
	2023	41.61	-38.48%
FORECAST:			
	2024	89.02	113.94%
	2025	93.77	5.33%
	2026	95.04	1.36%
	2027	82.00	-13.72%
	2028	78.76	-3.95%
	2029	82.16	4.32%
	2030	76.02	-7.47%
	2031	77.54	1.99%
	2032	79.93	3.09%
	2033	78.50	-1.80%

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
FPL					NG					200	200	1/1/2022	1/1/2042
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
Notes													
NONE													

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)[1]		Net Capacity (MW)[1]		Contracted Firm Capacity (MW)[1]		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
LES	Trail Ridge I	N/A	Duval	IC	Methane	9.1	9.1	9.1	9.1	9.1	9.1	12/08	12/26
LES	Trail Ridge II	N/A	Sarasota	IC	Methane	6	6	6	6	6	6	02/14	12/26
Rev Renewables	Jacksonville Solar	N/A	Duval	Solar PV	SUN	12	12	12	12	0	0	09/10	09/40
Northwest Jacksonville Solar Partners, LLC	NW JAX Solar	N/A	Duval	Solar PV	SUN	7	7	7	7	0	0	05/17	05/42
Old Plank Road Solar Farm LLC	Old Plank Road Solar	N/A	Duval	Solar PV	SUN	3	3	3	3	0	0	10/17	10/37
C2 Starratt Solar LLC	Starratt Solar	N/A	Duval	Solar PV	SUN	5	5	5	5	0	0	12/17	12/37
Inman Solar Incorporated	Simmons Road Solar	N/A	Duval	Solar PV	SUN	2	2	2	2	0	0	01/18	01/38
Hecate Energy Blair Road, LLC	Blair Site Solar	N/A	Duval	Solar PV	SUN	4	4	4	4	0	0	01/18	01/38
JAX Solar Developers, LLC	Old Kings Road Solar	N/A	Duval	Solar PV	SUN	1	1	1	1	0	0	10/18	10/38
Imeson Solar, LLC	SunPort Solar	N/A	Duval	Solar PV	SUN	5	5	5	5	0	0	12/19	12/39
FPL[2]	FPL Solar PPA	N/A	Multiple	Solar PV	SUN					150	150	04/23	04/28

Notes

(1) Solar capacity based on AC rating.
(2) Energy sourced from multiple facilities in FPL service territory. Will not extend at end of term.

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)[1]		Net Capacity (MW)[1]		Contracted Firm Capacity (MW)[1]		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Florida Renewable Partners	Forest Trail Solar PPA	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	12/26	12/61
Florida Renewable Partners	Caldwell Solar PPA	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	12/26	12/61
Florida Renewable Partners	Miller Solar PPA	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	12/26	12/61
Florida Municipal Power Agency	FMPA Solar PPA	N/A	Bradford	Solar PV	SUN	139.8	139.8	139.8	139.8	0	0	12/26	12/46
Florida Renewable Partners	Peterson Solar PPA	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	09/27	09/62
TBD	74.9 Solar PPA 1	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/28	03/53
TBD	74.9 Solar PPA 2	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/28	03/53
TBD	150 MW Solar PPA[2]	N/A	Duval	Solar PV	SUN	150	150	150	150	0	0	06/28	06/53
TBD	74.9 Solar PPA 3	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 4	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 5	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 6	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 7	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 8	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	74.9 Solar PPA 9	N/A	Duval	Solar PV	SUN	74.9	74.9	74.9	74.9	0	0	03/30	03/55
TBD	35 MW Solar PPA	N/A	Duval	Solar PV	SUN	35	35	35	35	0	0	03/30	03/55

Notes

(1) Solar capacity based on AC rating.
(2) Replacement for FPL solar contract.

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)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
NONE													

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
Notes													
NONE													

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	0	0	0	0	0	0	0	0	0	0	0
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	53	128	129	129	0	0	0	0	0	0	0
Purchase - Non-Firm	335	432	449	449	1096	1759	1735	3138	3134	3142	3122
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	24	24	24	24	24	24	24	24	24	24	24
Total	412	584	602	602	1120	1783	1759	3162	3158	3166	3146
Notes											

(1) Firm purchases from landfill gas; non-firm from solar PV.
(2) Customer owned generation from energy sales to SolarSmart/SolarMax customers from solar PPAs. JEA removes/retires the associated renewable attributes from inventory on behalf of the SolarSmart/SolarMax participants.

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 (%)
SunPort Solar	N	12/4/2019	2	4	90
Notes					
(Include Notes Here)					