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FPSC - COMMISSION CLERK

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

Commission Clerk:

On behalf of JEA, please accept the 2021 Ten-Year Site Plan – 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

General Items

1. **Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the period 2021-2030 (current planning period) in PDF format.**
2. **Please provide an electronic copy of all schedules and tables in the Company's current planning period TYSP in Microsoft Excel format.**
3. **Please refer to the Microsoft Excel document accompanying this data request titled "Data Request #1 – Excel Tables," (Excel Tables Spreadsheet). Please provide, in Microsoft Excel format, all data requested in the Excel Tables Spreadsheet for those sheets/tabs identified as associated with this question. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.**

Environmental Compliance Costs

4. Please explain if the Company assumes CO₂ 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:
 - 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 does not model any cost for CO₂.
 - 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.

N/A
 - c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no CO₂ compliance costs.

N/A

Flood Mitigation

5. **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 consist 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

Flood mitigation for substation consists of:

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

All new installation designed to the "100-year flood plan" by FEMA Design Guide

Load & Demand Forecasting

- 6. [Investor-Owned Utilities Only] Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time.**

N/A

- 7. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data provided in Excel file.

- 8. 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).

- 9. 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, and any difference/improvement made compared with those forecasts used in the Company's most recent prior TYSP.**

JEA's 2021 baseline forecast uses 10-years of historical data. Using the shorter periods allows JEA to capture the more recent trends in customer behavior, energy efficiency and conservation, where these trends are captured in the actual data and used to forecast projections.

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, commercial inventory square footage, total commercial employment, gross domestic product from Moody's Analytics, and JEA's commercial electric rate.

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

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 forecast which includes:

- Residential, Commercial and Industrial Forecast (discussed above)
- PEV Forecast
- Electrification
- Conservation Forecast
- Lighting Forecast
- Off- System Forecast

10. 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

11. 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 Microsoft 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 constantly compares forecasted values with actual values in order to determine if reevaluation of our forecast process is necessary. JEA looks at Net Energy for Load instead of Annual Retail Energy Sales since it better shows JEA's overall system capability.

JEA compares actual values against forecasted values for years 2001-2020 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.

12. 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 Microsoft 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.

See method explanation above. See the Historical Forecast Error Excel file for details.

13. Please explain any historic and forecasted trends in:

- 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 for all parameters used in JEA's 2021 TYSP

forecast are lower as compared to the previous forecasts. As a results, we see a lower forecast for Commercial and Industrial customers as compared to previous years.

The residential forecast however, shows a slightly higher forecast growth rate driven by the increase in historical sales trend. It is understood that last year residential sales increase is attributed to customers remote working due to COVID, however, it is unclear how much of the remote working will become a permanent trend.

JEA will continues to observe and analyze the COVID impact to JEA's sales and will adjust the methodology if it deemed necessary.

- 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 are one of 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.

In addition US Government's SEER Requirement Changes for 2015, that requires new split system central air conditioners to be a minimum 14 SEER, continues to contribute to the decrease in use, as customers replace their old units with more energy efficient units that comply with or exceed the standard, and as new constructions comply with the standard.

In JEA's 2021 TYSP we see that the average KWh per costumer is decreasing for Residential and Commercial customer for the forecasted 10 year period:

- Growth rate for average KWh per Residential customer is -0.2%
- Growth rate for average KWh per Commercial customer is -0.8%

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.

JEA had worked with a few existing large industrial customers to consolidate multiple accounts into single or fewer accounts with special rates. Industrial customers, such as Amazon, opened new facilities but attached them to their existing account. Similarly, there were some industrial customers that had business expansion in to additional buildings/facilities, but combined those new additions under their single existing

accounts. As a result of this, average industrial kWh/customer appeared to be increasing.

In JEA's 2021 TYSP 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 0.6%

JEA continues working with a few large industrial customers to look into distributed generation (DG). However, JEA's 2021 TYSP forecast for industrial customers does not include the impact from DG. DG can have a significant impact on the average industrial kWh/customer in the future.

- c. **Total Billed Retail Energy Sales (GWh) [for FPL], or Net Energy for Load (GWh) [for other companies]**, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends. Please include a detailed discussion of how the Company's demand management program(s) and conservation/energy-efficiency program(s) impact 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 2021 forecasted Net Energy for Load (NEL) annual average growth rate (AAGR) is 0.92%.

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

- a. **Demand Reduction due to Conservation 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 response 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 13 above. JEA's 2021 summer total peak forecast AAGR is 0.93% compared with 0.38% in last year's forecasted AAGR. The 2021 winter total peak forecast AAGR is 0.84% compared with 0.59% in last year's forecasted AAGR.

- 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 2021 forecasted cumulative conservation is higher as compared to 2020. It continues to bring JEA's Net Firm down due to the demand-side management program discussed in question 13.

15. **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 Company's Summer/Winter Peak Energy Demand.**

JEA begins its forecast process by weather normalizing energy for each customer class. JEA uses NOAA Weather Station - Jacksonville International Airport for historical weather data. 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.

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.

N/A

17. 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?

JEA included Plug-in Electric Vehicle (PEV) in the forecast used for this TYSP. JEA's forecasted AAGRs for PEV winter is approximate 21%, summer coincidental peak demand is approximately 36% and total energy are approximately 21% percent during the TYSP period. JEA will continue to monitor PEV technology and its impact on JEA's load forecast.

18. Please discuss 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 Florida Department of Highway Safety and Motor Vehicles (DHSMV) and the historical number of vehicles in Duval County from the U.S. Census Bureau.

JEA forecasted the numbers 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 and the average motor gasoline price from the U.S. Energy Information Administration (EIA) Annual Energy Outlook (AEO).

The usable battery capacity (85% of battery capacity) per vehicle was determined based on the current plug-in vehicle models in Duval County, such as Audi, BMW, General Motors' Chevrolet and Cadillac, Honda, Karma, Ford, Mitsubishi, Nissan, Porsche, Tesla, Toyota, Volkswagen and Volvo. 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 historical 5 years average growth of 0.01 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.

JEA developed the PEVs daily charge pattern based on the U.S. Census 2013 American Community Survey (ACS-13) for time of arrival to work and travel time to work for Duval County. The baseline forecast assumed that charging will be once every other day and uncontrolled; charging starts immediately upon arriving home.

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

JEA's forecasted AAGRs for PEV winter is approximate 21%, summer coincidental peak demand is approximately 36% and total energy are approximately 21% percent during the TYSP period

- 19. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data provided in Excel file.

- 20. 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.**

The company offered rebates to residential customers that purchased battery electric vehicles until the program closure, January 15, 2021. There are no specific tariffs offered for PEVs currently or in planning. Rebates are offered to non-residential customers seeking to electrify fleets, add workplace charging stations or public charging stations under the Electrification Rebate Program.

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

In June 2021 JEA is implementing an educational program for residential customers on the merits of converting to electric vehicles. The program will also educate and engage dealerships and help connect potential buyers with electric vehicles that are available.

- 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.**

JEA participates in multiple transportation and community organizations that serve as conduits for customer feedback. Additionally, customers utilize JEA's call center, web site, and email response groups to learn about various JEA service offerings.

21. Please describe how the Company monitors 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 after 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.

22. Please describe 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 upgrades to the JEA's distribution system have been completed due to the PEVs. JEA does not foresee any significant impact on the distribution system based on current PEV projections. JEA's existing facilities are capable of handling the PEV demand within the TYSP period.

23. 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 contracted with a firm that will analyze usage from the utility AMI network of meters to determine where EVs are being charged and to determine when the EVs are being charged. The first analysis of JEA's AMI data is expected in August 2021. Using a proprietary method, the contracted firm will identify the load characteristics of known EV chargers as indicated in meter hourly data.

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

With respect to the analysis that will be conducted using JEA's AMI data, which is expected to begin in August 2020, it is expected that nearly all (90%) of the Level 2 charging activity and some of the Level 1 charging activity will be detectable within the AMI dataset. As this analysis is planned to be conducted quarterly, new and existing chargers in use will be known to that extent each quarter.

25. [FEECA Utilities Only] For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual customer participation information for 10 years

prior to the current planning period. Please also provide a summary of all sources of demand response using the table.

Response: JEA has no demand response programs; therefore, there was no participation

26. [FEECA Utilities Only] For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

Response: JEA has no demand response programs; therefore, there was no participation

27. [FEECA Utilities Only] For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual seasonal peak activation information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

Response: JEA has no demand response programs; therefore, there was no participation

Generation & Transmission

28. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

Data provided in Excel file.

29. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

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

Data Provided in Excel file.

30. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See attached Excel file.

31. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned renewable generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

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

See attached Excel file.

32. 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?

JEA has no planned utility-owned renewable resources.

33. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See attached Excel file.

34. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

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

JEA has a new traditional generator purchased power agreement expected to deliver energy this planning period. The agreement is with FPL for 200 MW of natural gas combined cycle power starting in the beginning of 2022.

35. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See attached Excel file.

- 36. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a renewable generator pursuant to which energy will begin to be delivered to the Company during the current planning period.**
- a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.**

JEA has no new renewable generators expected to deliver energy this planning period. JEA is party to fifteen (15) renewable purchased power agreements: thirteen (13) with solar PV generators, of which eight (8) are online and operating, and five (5) are undergoing permitting; and two (2) landfill gas generators.

- 37. 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?**

Schedules for the 50 MW solar PV facilities (Cecil Commerce Solar Center, Forest Trail Solar Center, Deep Creek Solar Center, Westlake Solar Center, and Beaver Street Solar Center) have shifted due to Covid-19 related factors and other macroeconomic conditions. Project permitting, while nearly complete, has faced delays at both the local and state level due to Covid-19 closures and related constrained resources. Additionally, the solar projects across the country are facing raw material price increases due to tariffs imposed on raw materials (primarily solar modules and steel) and greater demand for components with Covid-19 constrained manufacturing and shipping supply. Finally, the power generation insurance market as a whole has experienced substantial price pressure with premium increases as much as 10x.

- 38. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

N/A

- 39. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each power sale agreement pursuant to which energy will begin to be delivered from the Company to a third-party during the current planning period.**
- a. For each power sale agreement in the table, provide a narrative response discussing the current status of the agreement.**

N/A

- 40. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified.**

N/A

- 41. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

See attached Excel file.

- 42. [Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's plant sites that are potential candidates for utility-scale (>2 MW) solar installations.

N/A

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

JEA's Distributed Generation (DG) Policy and Battery Incentive Program (BIP) allow 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. The BIP, meant to act in concert with the DG Policy, offers a financial incentive towards the purchase of a qualified residential battery energy storage system. Customers can then use the onsite renewable generation to charge their battery systems for later use, i.e. at times of peak or during an outage.

- 44. [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.

N/A

- 45. 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.**

JEA does not consider solar PV to contribute to either seasonal peak.

- 46. Please identify whether a declining trend in costs of energy storage technologies has been observed by the Company.**

JEA continues to monitor the energy storage market and related price projections. As seen in previous years, lithium ion technologies are leading the market. Installed costs for lithium technologies are hovering in the \$300-\$400/kWh range, depending on system size and

application. Researchers project prices to continue to decline over 40% by 2030. Most of this is being driven by the electric vehicle market with lowering costs of battery packs.

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

As seen in recent years, flow battery technologies continue to show promising growth. Companies like ESS Inc., ViZn Energy, and Primus Power are showing increasing deployments with their systems. Flow technologies remain attractive due to their long lifespan and flexibility.

Other technologies like hydrogen energy storage have shown some growth as well. Siemens has a scalable electrolyzer rated at 17.5 MW. Electrolyzers produce hydrogen from water using electrical current and this hydrogen is compressed and stored. When energy is needed, fuel cells process the hydrogen to create electricity. While life span and response time for this technology are competitive, the roundtrip efficiency of these types of systems (less than 40%) make it less attractive, especially when compared to lithium ion technologies.

48. 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 is currently exploring optimum locations for storage on the system. Co-location with renewable generation, substation placement, and areas of considerable load are a few of the options being considered.

49. Please explain whether ratepayers have expressed interest in energy storage technologies. If so, how have their interests been addressed?

JEA formulated the JEA Battery Incentive Program to encourage renewable energy adoption and act in concert with our Distributed Generation Policy. A rebate is provided for the purchase of a qualified battery energy storage system to those customers with approved renewable generation systems. Excess renewable generation produced by the customer can be used to charge the battery, allowing them to use the power later. This stored energy can then be used to offset consumption. Any energy sent to JEA, beyond what is stored in the battery, is credited at fuel rate. Nearing 200 JEA residential customers have installed a battery energy storage system with a solar PV system with a total storage capacity of 3.1 MWh (April 2021).

50. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See attached Excel file.

51. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See attached Excel file.

52. 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 or in development. JEA did explore the option of deploying solar and storage at a lift station, as part of a resiliency pilot, however that project is on hold at this time.

53. 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.**

At this time, JEA does not utilize energy storage technology as a means to provide firm capacity for non-firm generation. JEA has considered using energy storage as a means to provide firm capacity and is still undergoing internal discussions regarding what, if any, capacity value should be assigned to energy storage. JEA still holds the position that solar PV and storage systems solely charged by non-firm generation sources, such as solar PV, have no

capacity value, as they are not guaranteed to be available due to the intermittent nature of the technology.

The sole 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. Given the intermittency of solar PV, the power produced by the plant is not considered firm capacity.

54. 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.

JEA SolarSmart -Since 2017 JEA offers residential and small/mid-sized commercial customers the opportunity contribute towards funding solar adoption by purchasing renewable energy through its JEA SolarSmart program. Participants pay a premium on the electric bill for solar energy. Customers can select any percent (1% to 100%) of their energy to come from solar. The renewable energy is produced by six solar facilities inside JEA services territory that were installed between 2017 and 2019.

JEA SolarMax – The program in development and will be available for JEA's largest commercial and industrial customers with a minimum consumption of 7 million kWh. It is planned to launch between 2022-2023. Through JEA SolarMax, large commercial customers can choose to have up to 100 percent of their business's energy needs met by solar power. Companies select either a five- or 10-year contract term. The JEA SolarMax rate replaces the fuel charge with a solar price. The solar energy will be produced by five new solar farms in JEA service territory. The facilities are scheduled to start generation in 2022. Each solar facility will have 50 MW of generation capacity and will have energy storage capacity. Participating accounts can opt to support the creation of a specific new solar farm to underscore their support for renewable energy sources

55. Please identify and discuss the Company's role in the research and development of utility power technologies. 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.

JEA has no utility power technology research underway at this time.

56. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

N/A

57. **Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

See attached Excel file.

58. **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 does not have any planned generating units at this time.

59. **Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data provided in excel file.

60. **[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.

N/A

61. **Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.**

Data provided in excel file.

- 62. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for fuel-switching.**

Data provided in excel file.

- 63. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data provided in Excel file.

Environmental

- 64. 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.**

On March 2, 2021, the House Energy and Commerce Committee of the Biden Administration proposed an updated version of the Climate Leadership and Environmental Action for our Nation's (CLEAN) Future Act. It is an ambitious comprehensive legislation with over 200 separate provisions with a price tag of over \$500 billion over ten years.

It sets two strong national greenhouse gas (GHG) pollution targets: 1) At least 50 percent reduction in GHG emissions from 2005 levels by 2030, and 2) a 100 percent clean economy with net zero greenhouse gas pollution by 2050. For the power sector, it requires electricity suppliers to provide an increasing supply of clean energy to consumers starting in 2023, rising to 80 percent clean energy by 2030 and 100 percent by 2035.

Although the prospect of the entire bill Act passing in the Senate with 60 votes (assuming 60 are needed) is anyone's guess at this time, part of the bill could be carved off and incorporated into other parts of the Biden Administration's bills such as the infrastructure package. It also seems likely that EPA and other agencies could attempt to promulgate and implement various pieces of it.

The current and planned electricity generation mix for JEA will be a key factor in complying with the Act's goals and upcoming standards. In addition to the atmospheric sinks of CO₂ 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,

and certain biologic processes. These options will require substantial technological advances to produce meaningful (and eventually cost-effective) results, and their viability in Florida is uncertain at this time.

The Act creates zero-emission electricity credits based on carbon intensity of electric generation based on a carbon intensity baseline, which is 0.82 metric tons CO₂ per MWh through 2030, and declines to 0.4 in 2035. In lieu of zero-emission electricity credits, the electricity suppliers can also use the Alternative Compliance Payment (ACP) mechanism, the price of which increases each year from 2023 to 2035. If a supplier submits an ACP for more than 10% of its compliance obligations for at least two consecutive years (up to five years), the EPA can defer the percentage increases starting with 2031, and also use 25% of the ACP funds to assist the supplier's customers with their electric utility bills.

Update on Previous CO₂ Rules

CO₂ Emission Guidelines and State Standards for Existing Sources: On October 23, 2015, EPA published final Emission Guidelines for existing utility units [Clean Power Plan (CPP)], setting individual statewide emission rate goals, and directing states to submit initial plans to achieve the goal by September 6, 2016. On February 9, 2016 the Supreme Court stayed implementation of the rule. On April 4, 2017, pursuant to the Executive Order, EPA announced that it is reviewing this rule.

On October 16, 2017, EPA published a proposal to repeal the CPP. On August 31, 2018, EPA published a proposal to replace the CPP, called the Affordable Clean Energy (ACE) Rule. The Final ACE rule was published on July 8, 2019, and the CPP was repealed at the same time. At this time, it is unlikely that the State of Florida will make its own rule, and will instead opt for revising existing air permits based on the federal rule. Around mid 2021, affected sources will submit permit revision applications to Florida Department of Environmental Protection (FDEP) with proposed unit-specific CO₂ standards using EPA and FDEP guidance.

The ACE rule regulates CO₂ emissions from electric generating units (EGUs) with a focus on coal-fired units. The Best System of Emission Reduction (BSER) for these units will be in terms of heat rate improvement (HRI). Florida's electric utilities have been substantially reducing CO₂ emissions, in terms of both tons per year and lb/MWh, over the past several years, while at the same time substantially increasing generation. The ACE rule provides a specific mandate that will reinforce these reductions, and ensure that additional measures are employed where appropriate. EPA will allow states with considerable flexibility to design their State Plan and set unit-specific standards.

After the oral arguments on October 8, 2020, the DC Circuit Court vacated the ACE rule on January 9, 2021, and remanded it back to EPA. The rule will no longer be in effect once the Mandate is issued (i.e., the court's directive to enforce its decision). The court also stated that the repeal of the CPP was "imbedded" in the ACE rule, but did not say that its vacatur of ACE resurrects the CPP. The court issued partial mandate of ACE on March 5, 2021, meaning CPP remains repealed at this time. On April 29 and 30, 2021, respectively, a group of 19 states (West Virginia, Alabama, Alaska, Arkansas, Georgia, Indiana, Kansas, Louisiana, Missouri, Montana, Nebraska, Ohio, Oklahoma, South Carolina, South Dakota, Texas, Utah, and

Wyoming; and Mississippi Governor) and the North American Coal Corporation (“NACCO”) asked the U.S. Supreme Court to review the D.C. Circuit Court’s decision to vacate and remand the ACE rule.

New Source Review (NSR) Revisions: EPA is proposing to revise the NSR program on a separate track (rather than within the ACE rule). To that end, EPA has issued a series of guidance memorandums and also proposed an error correction rule In November 2019. These reforms are not expected to impact JEA’s existing EGUs at this time.

New Source Performance Standards (NSPS) Revisions: EPA is also revising the NSPS for new EGUs, i.e., 111(b) rules. This proposal revises Best System of Emission Reduction (BSER) for affected units as follows:

- For large units, the proposed emission rate would be 1,900 pounds of CO₂ per megawatt-hour on a gross output basis (lb CO₂/MWh-gross). For small units, the proposed emission rate would be 2,000 lb CO₂/MWh-gross.
- For large modifications of steam generating units, the standards are to be consistent with the standards for large and small newly constructed units. For the standards of performance for reconstructed fossil fuel-fired steam units, which are also based on the best available efficiency technology, the standards are to be consistent with the emission rates for newly constructed units.
- EPA is taking comments whether and how to address concerns raised by stakeholders regarding the increased use of simple cycle aero-derivative turbines, including as back-up generation for wind and solar resources, whose operation may exceed the non-base load threshold. EPA is also asking for the public’s views on the proper interpretation of the phrase “causes, or contributes significantly to air pollution”, the agency’s historic approach to this requirement, and whether this requirement should apply differently in the context of greenhouse gases than for traditional pollutants.

These revisions are not expect to impact JEA’s existing EGUs, unless they are significantly “modified or reconstructed” or when JEA decides to add new EGUs.

National Emission Standard for Hazardous Air Pollutants (NESHAP): 40 CFR 63 Subpart YYYYY (for Combustion Turbines) has also been revised. As a result of the Residual Risk and Technical Review, 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 expect to impact JEA’s existing EGUs, unless they are significantly “modified or reconstructed” or if JEA constructs a new combustion turbine. As long as the potential to emit “formaldehyde” and hazardous air pollutants (HAPs) from the JEA’s CT plants (e.g. BBGS)

are kept below the major source thresholds of 10 tpy for each single HAP and 25 tpy for total HAPs, they will not be subject to any additional controls or testing required by this rule.

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.
- 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. Regardless of the outcome of this reconsideration, FDEP is well-positioned to address the concerns with its existing regulations. Although JEA does not currently have a full assessment of the impact of this rule, its air permits have specific conditions (requirements) which may be sufficient as they are. Any additional work practice requirements that may be imposed on some of the JEA's emissions units to further address the SSM events are expected to be minimal at this time.

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.

On March 14, 2021, EPA withdrew a denial of petition to create a NAAQS for CO₂. At this time, there is a consideration by the new EPA to create a secondary NAAQS for CO₂, which is to protect public welfare, as opposed to public health.

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

This rule will only affect only new, modified or reconstructed EGUs.

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

A regulatory analysis must be done for any proposed new or modified EGUs

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

Not known at this time

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

Permits will like be required. Typical permit processing times should be part of the time line.

d. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the costs for the current planning period.

No

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

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

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

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

c. Cooling Water Intake Structures (CWIS) Rule.

d. Coal Combustion Residuals (CCR) Rule.

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

f. Affordable Clean Energy Rule or its replacement.

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

CLEAN Future Act could impose additional costs of renewable energy sources, as well as buying CO₂ credits. They cannot be quantified at this time.

- 67. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data Provided in Excel file.

- 68. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

- 69. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

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. No retirements, curtailments, or installation of additional emission controls are expected to be required as a results of currently proposed or finalized rules. The CLEAN Future Act may require new equipment and/or operational changes (including buying clean electricity credits) but it is not known at this time. Estimated costs under the Alternative Compliance Payment plan is \$2 to 5 million in 2030.

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 2023. JEA's current estimate of compliance cost shows a one-time cost anywhere between \$10 to 50 million.

Solid Waste Rules: Once the SJRPP Area B Phase I cell closure design is finalized and any necessary corrective actions are developed for groundwater; the costs associated with

closure, remediation, and the post-closure care period will be estimated. None of this information is currently available.

Note: The SJRPP Area B Phase I cell closure is underway at a construction bid cost of \$5.9MM. Once construction is complete and any necessary corrective actions are developed for groundwater, the costs associated with remediation and post-closure care period will be estimated.

- 70. 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.**

Being explored.

Fuel Supply & Transportation

- 71. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.**

Data provided in Excel file.

- 72. 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.

- 73. 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.

JEA will continue to consume Powder River Basin (PRB) coal at Scherer Unit 4 until the resource is retired on January 1st, 2022. The competitive pricing of delivered coal from western mines supports continued operation of Scherer Unit 4 on PRB coal.

b. Natural Gas

The price of natural gas is projected in nominal dollars to increase throughout the forecast period. The Energy Information Agency (EIA) projects that consumption of natural gas will keep growing, driven by expectations that natural gas prices will remain low compared with historical levels. However, the EIA also expects natural gas-fired generation to lose some market share as regulatory and market factors drive generation mixes into more renewable generation. 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 2. 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.

74. 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.

75. 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 in the next ten years, JEA may experience more favorable natural gas pricing as a result of some of those pipelines providing additional takeaway capacity from the supply regions. Natural gas transportation capacity into the Florida market recently increased with the completion of Sabal Trail.

76. 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.

According to the Annual Energy Outlook 2021, the EIA expects United States LNG exports to more than double between 2020 and 2029. This projected increase in LNG exports 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.

77. 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.

78. 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.

Scherer Unit 4 receives all coal deliveries by rail. As a co-owner of Scherer Unit 4, JEA's fuel is delivered from the Powder River Basin in Wyoming to Plant Scherer located near Macon, Georgia by two rail carriers – one in the west and one in the east. Georgia Power Company entered into contracts with the rail carriers on behalf of the Scherer co-owners. Competition between the major rail carriers was insured by including all in the negotiation process.

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

79. 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.

80. 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

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

N/A

Weatherization

82. Please identify and discuss steps 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 plans and check lists are activated and completed on an annual basis prior to the start of the winter season, normally in the October to November time frame. We also have 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

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

Generation is currently in the process of developing a scope of work to procure an external SME contractor to conduct a full operational evaluation and upgrading of the existing heat trace and insulation systems at our CT/Combine Cycle facilities. Our current plan is to have this evaluation and upgrade completed prior to the winter 2021 season.

Existing Generating Unit Operating Performance

Plant Name	Unit No.	Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
		Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Kennedy GT	GT7	0.62%	2.77%	0.92%	5.00%	97.52%	92.23%	11,734	10,476
Kennedy GT	GT8	2.53%	1.45%	8.71%	5.00%	88.48%	93.55%	11,363	10,493
Northside	1	6.82%	6.19%	2.04%	2.50%	87.96%	91.31%	10,267	9,806
Northside	2	8.69%	8.85%	4.43%	2.50%	79.12%	88.65%	11,202	9,606
Northside	3	5.22%	4.55%	1.17%	3.00%	91.02%	92.45%	10,842	10,762
Northside GT	GT3	0.87%	2.30%	0.26%	5.00%	97.59%	92.70%	19,934	13,854
Northside GT	GT4	0.00%	2.30%	2.70%	5.00%	96.59%	92.70%	21,580	13,854
Northside GT	GT5	0.00%	1.40%	0.65%	5.00%	89.06%	93.60%	21,434	13,854
Northside GT	GT6	6.29%	1.40%	0.45%	5.00%	92.65%	93.60%	20,873	13,854
Brandy Branch	GT1	4.82%	2.55%	0.90%	5.00%	94.04%	92.45%	11,082	10,325
Brandy Branch CC	CT2,CT3,STM4	9.03%	3.37%	0.35%	3.00%	89.89%	93.63%	6,843	6,489
GEC GT	GT1	3.36%	1.37%	0.30%	5.00%	96.17%	93.63%	11,190	10,494
GEC GT	GT2	5.51%	1.37%	0.38%	5.00%	93.76%	93.63%	10,928	10,497

Nominal, Firm Purchases

Year	Firm Purchases	
	\$/MWh	Escalation %
HISTORY:		
2018	45.30	-3.29%
2019	30.72	-32%
2020	88.00	186%
FORECAST:		
2021	115.18	30.89%
2022	76.15	-33.89%
2023	72.73	-4.49%
2024	72.35	-0.52%
2025	73.11	1.05%
2026	74.50	1.90%
2027	74.58	0.11%
2028	75.95	1.84%
2029	77.74	2.36%
2030	80.49	3.54%

Financial Assumptions
Base Case

AFUDC RATE _____ %
CAPITALIZATION RATIOS:
 DEBT _____ %
 PREFERRED _____ %
 EQUITY _____ %
RATE OF RETURN
 DEBT _____ %
 PREFERRED _____ %
 EQUITY _____ %
INCOME TAX RATE:
 STATE _____ %
 FEDERAL _____ %
 EFFECTIVE _____ %
OTHER TAX RATE: _____ %
DISCOUNT RATE: _____ %
TAX
DEPRECIATION RATE: _____ %

Financial Escalation Assumptions

Year	General	Plant Construction	Fixed O&M	Variable O&M
	Inflation	Cost	Cost	Cost
	%	%	%	%
2021	2%	2%	2%	2%
2022	2%	2%	2%	2%
2023	2%	2%	2%	2%
2024	2%	2%	2%	2%
2025	2%	2%	2%	2%
2026	2%	2%	2%	2%
2027	2%	2%	2%	2%
2028	2%	2%	2%	2%
2029	2%	2%	2%	2%
2030	2%	2%	2%	2%

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

Year	Annual Isolated			Annual Assisted		
	Loss of Load Probability (Days/Yr)	Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2021	1.88E-03	15%	1400	N/A	N/A	N/A
2022	1.30E-03	18%	1800	N/A	N/A	N/A
2023	5.24E-04	21%	100	N/A	N/A	N/A
2024	8.06E-04	20%	200	N/A	N/A	N/A
2025	9.98E-04	20%	500	N/A	N/A	N/A
2026	7.86E-04	19%	600	N/A	N/A	N/A
2027	1.25E-03	17%	200	N/A	N/A	N/A
2028	1.41E-03	17%	900	N/A	N/A	N/A
2029	1.27E-03	16%	1600	N/A	N/A	N/A
2030	1.44E-03	15%	3100	N/A	N/A	N/A

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 7

Year	Month	Actual Peak Demand	Demand Response Activated	Estimated Peak Demand	Day	Hour	System-Average Temperature
		(MW)	(MW)	(MW)			(Degrees F)
2020	1	2438	0	2438	22	8	33
	2	2027	0	2027	28	8	40
	3	2076	0	2076	28	18	84
	4	2108	0	2108	9	18	87
	5	2286	0	2286	22	16	89
	6	2585	0	2585	29	18	93
	7	2527	0	2527	13	18	92
	8	2578	0	2578	4	17	90
	9	2487	0	2487	4	16	90
	10	2160	0	2160	29	17	78
	11	1817	0	1817	10	15	81
	12	2344	0	2344	27	8	32
2019	1	2475	0	2475	31	8:00	43
	2	1936	0	1936	14	8:00	53
	3	2120	0	2120	6	8:00	46
	4	1969	0	1969	30	18:00	74
	5	2584	0	2584	28	15:00	85
	6	2643	0	2643	24	17:00	86
	7	2643	0	2643	2	16:00	88
	8	2644	0	2644	14	16:00	87
	9	2556	0	2556	9	17:00	86
	10	2256	0	2256	4	17:00	77
	11	1834	0	1834	7	15:00	78
	12	2098	0	2098	19	8:00	47
2018	1	3080	0	3080	8	8:00	39
	2	1956	0	1956	1	8:00	55
	3	2000	0	2000	15	8:00	50
	4	1819	0	1819	3	17:00	73
	5	2242	0	2242	31	17:00	81
	6	2511	0	2511	4	17:00	84
	7	2535	0	2535	13	16:00	85
	8	2557	0	2557	8	15:00	87
	9	2556	0	2556	19	16:00	84
	10	2354	0	2354	17	17:00	85
	11	2144	0	2144	28	8:00	44
	12	2367	0	2367	12	8:00	47
Notes							
(Include Notes Here)							

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 19

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)
2021	2335	97		1.805	0.319	9
2022	2764	110		2.266	0.400	11
2023	3297	125		2.839	0.501	13
2024	3924	141		3.513	0.620	17
2025	4642	159		12.292	0.757	20
2026	5450	178		14.791	0.911	24
2027	6351	199		17.586	1.083	29
2028	7366	222		20.735	1.277	34
2029	8502	247		24.267	1.494	40
2030	9766	275		28.201	1.736	46
Notes						
(Include Notes Here)						

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 25

[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
2011									
2012									
2013									
2014									
2015									
2016									
2017									
2018									
2019									
2020									
Notes									
JEA has no demand response programs; therefore, there was no participation									

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 26

[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
2011										
2012										
2013										
2014										
2015										
2016										
2017										
2018										
2019										
2020										
Notes										
JEA has no demand response programs; therefore, there was no participation										

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 27

[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)
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
Notes							
JEA has no demand response programs; therefore, there was no participation							

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 28

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	189.7	191.2			90.27
BRANDY BRANCH	CT2	DUVAL	CT	NG	5	2001	190.5	210	178.6	211.7			90.45
BRANDY BRANCH	CT3	DUVAL	CT	NG	10	2001	190.5	210	189.7	211.7			90.45
BRANDY BRANCH	STM4	DUVAL	CA	WH	1	2001	225	225	188.4	199.7			90.45
GREENLAND ENERGY CTR	GT1	DUVAL	GT	NG	6	2011	149.9	192.7	178.6	191.2			15.92
GREENLAND ENERGY CTR	GT2	DUVAL	GT	NG	6	2011	149.9	192.7	178.6	191.2			10.64
J. D. KENNEDY	GT7	DUVAL	GT	NG	6	2000	150.5	192.7	178.6	191.2			4.5
J. D. KENNEDY	GT8	DUVAL	GT	NG	6	2009	150.5	192.7	178.6	191.2			2.24
NORTHSIDE	1	DUVAL	ST	PC	5	2003	310	310	293	293			49.58
NORTHSIDE	2	DUVAL	ST	PC	4	2003	310	310	293	293			56.34
NORTHSIDE	3	DUVAL	ST	NG	6	1977	540	540	524	524			40.51
NORTHSIDE	GT3	DUVAL	GT	DFO	1	1975	50.4	62	50	61.6			0.15
NORTHSIDE	GT4	DUVAL	GT	DFO	1	1975	50.4	62	50	61.6			0.15
NORTHSIDE	GT5	DUVAL	GT	DFO	12	1974	50.4	62	50	61.6			0.15
NORTHSIDE	GT6	DUVAL	GT	DFO	12	1974	50.4	62	50	61.6			0.15
SCHERER	4	MONROE, GA	ST	BIT	2	1989	210	210	198	198			7.57
Notes													
(Include Notes Here)													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 29

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	(%)
Notes													
JEA has no generation resource planned for in-service within the current planning period.													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 30

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 2021
 Staff's Data Request # 1
 Question No. 31

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)													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 33

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
NONE													
Notes													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 34

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
Florida Power & light	TBD	TBD	TBD	CC	NG	200	200	200	200	200	200	1/1/2022	12/31/2042
Notes													
(Include Notes Here)													

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 35

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
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
PSEG	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
Notes													
(1) Solar capacity based on AC rating.													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 36

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
Cecil Commerce Solar Partners, LLC	Cecil Commerce Solar Center	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	12/22	12/47
Forest Trail Solar Partners, LLC	Forest Trail Solar Center	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	08/22	08/47
Deep Creek Solar Partners, LLC	Deep Creek Solar Center	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	10/22	10/47
Westlake Solar Partners, LLC	Westlake Solar Center	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	05/22	05/47
Beaver Street Solar Partners, LLC	Beaver Street Solar Center	N/A	Duval	Solar PV	SUN	50	50	50	50	0	0	07/22	07/47
Notes													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 38

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													
N/A													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 39

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													
N/A													

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 41

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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	90	130	130	130	130	130	130	0	0	0	0
Purchase - Non-Firm	54	81	292	680	679	674	671	669	667	663	660
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	0	0	0	0	0	0	0	0	0	0	0
Total	144	211	422	810	809	804	801	669	667	663	660
Notes											
(1) Firm purchases from landfill gas; non-firm from solar PV.											

Data Request #1 - Excel Tables

TYSP Year 2021
Staff's Data Request # 1
Question No. 42

Plant Name	Land Available (Acres)	Potential Installed Net Capacity (MW)	Potential Obstacles to Installation
N/A			

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 50

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	4-Dec-19	2	4	90
JEA Battery Incentive Program	N	1-Apr-18	0.4	3.1	N/A
Notes					
(Include Notes Here)					

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 51

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Projected Max Capacity Output (MW)	Projected Max Energy Stored (MHh)	Projected Conversion Efficiency (%)
NONE					
Notes					
(Include Notes Here)					

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 56

Year		As-Available Energy (\$/MWh)	On-Peak Average (\$/MWh)	Off-Peak Average (\$/MWh)
Actual	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
Projected	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
Notes				
N/A				

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 57

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				
JEA does not have any planned traditional units at this time.				

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 59

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	(2,3,4)	CC	NG	92.28	91.7	89.3	86.4	91.1	91.7	90.9	88.3	90.3	91.3	91.7
Brandy Branch	GT1	GT	NG	13.69	8.4	4.7	5.1	11.5	13.5	13.9	15	14.9	10.4	6.3
GEC	GT1	GT	NG	17.16	19.6	15.1	10.3	13.8	20.1	15.1	16.9	18	14.4	15.9
GEC	GT2	GT	NG	16.83	12.7	10.3	6.1	9.6	13.6	9.9	12.2	11.9	10	10.1
Kennedy	GT7	GT	NG	4.44	7.1	5.6	1.7	3	3.9	3.5	4.4	4.9	4	6.9
Kennedy	GT8	GT	NG	2.88	4.9	3.2	0.6	1.1	1.8	1.4	1.8	2.4	1.7	3.5
Northside	1	ST	PC	61.20	66.9	54.2	51.3	35.8	34.8	40.9	48.4	53.3	56.2	54
Northside	2	ST	PC	37.79	71	61.8	52.3	52.3	48.2	50.5	51.3	56.8	56.9	62.3
Northside	3	ST	NG	45.52	43.6	40.9	36.6	38.5	41	42	43.6	37.9	40.4	40.6
Northside	GT3	GT	DFO	0.15	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Northside	GT4	GT	DFO	0.13	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Northside	GT5	GT	DFO	0.09	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Northside	GT6	GT	DFO	0.08	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Scherer	4	ST	BIT	37.50	75.7	0	0	0	0	0	0	0	0	0
Notes														

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 61

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYYY)	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)					

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 62

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYYY)	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)					

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 63

Transmission Line	Line Length	Nominal Voltage	Date Need	Date TLSA	In-Service Date
	(Miles)	(kV)	Approved	Certified	
NONE					
Notes					
(Include Notes Here)					

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 65 e

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

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 67

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
NGS1	ST	PC	293 MW	N/A	Increase usage of renewables and/or buy clean electricity credits	Periodic Monitoring and Testing	N/A	Possible additional equipment	N/A	N/A
NGS2	ST	PC	293 MW	N/A	Increase usage of renewables and/or buy clean electricity credits	Periodic Monitoring and Testing	N/A	Possible additional equipment	N/A	N/A
NGS3	ST	Gas/Oil	524 MW	N/A	Limit FO6 Usage, Emissions Monitoring	N/A	N/A	N/A	N/A	N/A
Scherer	ST	BIT	200 MW	Additional Equipment	Increase usage of renewables	Continuous Monitoring	Continuous Monitoring	Possible additional equipment	Possible additional equipment	Consult with Georgia Power
BBGS	CC	NG	501 MW	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes										
(Include Notes Here)										

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 68

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR \$ millions)						
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Notes										
See comments on the Word Document										

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 69

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)						
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Notes										
Cannot determine timing at this time.										

Data Request #1 - Excel Tables

TYSP Year 2021
 Staff's Data Request # 1
 Question No. 71

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU
Actual	2011	N/A	N/A	7009	4.04	4542	4.49	25.00	13.18	22.00	19.61
	2012	N/A	N/A	4980	3.39	5890	3.26	9.00	15.85	1.00	21.61
	2013	N/A	N/A	7428	3.14	3921	3.99	0.00	15.39	4.00	20.86
	2014	N/A	N/A	8039	2.91	4041	4.68	8.00	13.86	3.00	20.73
	2015	N/A	N/A	6512	2.32	5312	2.96	6.00	6.71	2.00	12.57
	2016	N/A	N/A	6733	2.42	4724	2.98	16.00	5.39	3.00	11.00
	2017	N/A	N/A	5360	3.05	5751	3.28	0.00	7.69	3.00	13.39
	2018	N/A	N/A	3557	3.01	6574	3.66	24.00	10.01	18.00	15.98
	2019	N/A	N/A	3287	2.37	6306	2.78	1.00	9.66	4.00	14.85
	2020	N/A	N/A	3019	2.18	8215	2.19	1.00	6.53	5.00	11.46
Projected	2021	N/A	N/A		3.15		3.11		N/A		12.42
	2022	N/A	N/A		3.45		3.13		N/A		12.66
	2023	N/A	N/A		3.51		3.07		N/A		12.81
	2024	N/A	N/A		3.59		2.96		N/A		13.38
	2025	N/A	N/A		3.66		3.09		N/A		13.70
	2026	N/A	N/A		3.76		3.26		N/A		13.89
	2027	N/A	N/A		3.81		3.38		N/A		13.88
	2028	N/A	N/A		3.88		3.59		N/A		14.41
	2029	N/A	N/A		3.95		3.78		N/A		15.05
	2030	N/A	N/A		4.01		3.91		N/A		15.53
Notes											
(Include Notes Here)											