21 West Church Street
Jacksonville, Florida 32202-3139

May 18, 2020

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

ELECTRIC
WATER
SEWER

Commission Clerk:

On behalf of JEA, please accept the 2020 Ten-Year Site Plan – Data Request #1.

If you have any questions, please contact me by phone at (904) 665-8765 or 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 2020-2029 (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 CO_2 compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative:**
   a. **Please identify the year during the current planning period in which CO_2 compliance costs are first assumed to have a non-zero value.**

   JEA does not model any cost for CO2.

   b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of CO_2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.
   c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no CO_2 compliance costs.

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.

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 Fiscal Year 2020 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, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total number of 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 product 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, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.

Demand

JEA normalizes its historical seasonal peaks using historical maximum and minimum temperatures, 24°F as the normal temperature for the winter peak and 97°F for the summer peak. JEA then develops the seasonal peak forecasts using multiple regression analysis of normalized historical seasonal peaks, normalized historical and forecasted residential, commercial and industrial energy for Winter/Summer peak months, heating degree hour for the 72 hours leading to winter peak and cooling degree hours for the 48 hours leading to summer peak.

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 and 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.

JEA's petition for approval of demand-side management plan, DOCKET Number: 20200057 (OPEN), uses the avoidance or deferral of planned supply side unit expenditures from JEA's 2020 TYSP, as determined in the related load forecast

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 its forecasted values with actual values in order to determine if we need to reevaluate our forecast methodology. JEA looks at Net Energy for Load instead of Annual Retail Energy Sales, since it provides a better picture of our overall system capability and consequently our forecast process can be better evaluated.

JEA compares actual values against forecasted values for each year from 2000-2019 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 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 for JEA's 2020 TYSP forecast are lower as compared to the previous forecasts, hence, that resulted in a lower forecast for almost all customer types as compared to previous forecasts. The only

exception is residential forecast, which is higher than previous forecasts due to the past two years of higher than expected actual sales that drove the forecast trend higher as compared to previous forecasts.

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 last10 years and increased in electric rates contribute 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, also 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 2020 TYSP we see that the average KWh per costumer is decreasing for Residential and Commercial customer for the forecasted 10 year period:

- JEA's 2020 forecasted total consumption for Residential customers is (0.67)%
- JEA's 2020 forecasted total consumption for Commercial customers is (0.4)%

This trend is influenced by the declining Residential and Commercial consumption we see our 10 year history (2010-2019), (1.62)% and (1.3)% respectively.

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 has 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 are 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 2020 TYSP we see a small growth in the average KWh for Industrial customers for the forecasted 10-year period:

- JEA'S 2020 forecasted total consumption for Industrial customers is 0.9%

JEA is also working with a few large industrial customers to look into distributed generation (DG). However, JEA's 2020 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 2020 forecasted Net Energy for Load (NEL) annual average growth rate (AAGR) is 0.63%.

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 trending with the forecasted energy for summer/winter peak months. The forecast trend is discussed in question 13 above. JEA's 2020 summer total peak forecast AAGR is 0.38% compared with 0.60% in last year's forecasted AAGR. The 2020 winter total peak forecast AAGR is 0.59% compared with 0.96% 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 2020 forecasted cumulative conservation is higher as compared to 2019. It continues to bring our Net Firm down due to out 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. Please refer to the Company's respective Utility Perspective section in the Commission's "Review of the 2019 Ten-Year Site Plans of Florida's Electric Utilities." Please answer your Company's respective questions below regarding the growth of customers and retail energy sales, of which the associated figure in the Utility Perspective section is based on the values reported on Schedule 2 of your respective Company's 2019 TYSP:

FPL:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012 and the decline in the growth rate in 2017, respectively.

DEF:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the projected decline in the growth rate in 2019, respectively.

TECO:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy in 2011.

GPC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the increase in the growth rate in 2018, respectively.

GRU:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please identify the drivers which contribute to the sharp fall in the growth of retail energy sales in the period 2011-2014 and the decline in the growth rate in 2017, respectively.

JEA:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

Many factors drove the decrease in energy sales since 2011. The recession was the biggest factor that resulted in customers' behavioral change to conserve energy. In additional, JEA's rate increases also contributed to the customers' behavioral change to conserve energy. Other factors include the improvement in efficiency in new appliances and equipment, the phase-out of incandescent bulbs and conversion to LED bulbs, the change in technologies to high energy efficient technologies (i.e. Plasma TVs to LED TVs, and high energy consumption desktop computers to low energy consumption laptops/tablets). Other contributor is the new US Government's SEER Requirement Changes for 2015, that requires new split system central air conditioners to be a minimum 14 SEER, to continue also 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

b. Please explain why the divergence in the growth rates of customers and retail energy sales increase during the forecast period.

As per the discussion in part a, while number of customers continues to group, efficiency and behavioral change to conserve energy drove the average consumption per customer down, which is the main reason for the divergence.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, and the decline in the growth rate in 2017, respectively.

As per the discussion in part a, listed the major contributors to the drop in energy sales, such as behavior change to conserve energy due to recession and JEA's rate increase and the improvement in high energy efficient appliances and equipment.

JEA's main contributor for the decline in the growth rate in 2017 was attributed to the decrease in energy sales and eventually the end of energy sales completely to Florida Public Utilities (FPU). JEA speculated the decline in growth rate in 2017 was also attributed to the US Government's SEER Requirement Changes to minimum of SERR 14 rating. While it took effect in 2015, it is not unexpected that its impact is observed a year or two later.

LAK:

a. Please explain, in general, why the Company's growth rate of retail energy sales is projected to lag the growth rate of customers starting in 2020.

b. Please explain why the divergence in the growth rates of customers and the retail energy sales is projected to increase during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012, and the relatively high growth rates in 2015 and 2018, respectively.

OUC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.

b. Please identify the drivers which contribute to the decline in the growth rate of retail energy sales in 2012 and 2017, respectively.

SEC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2014, and the decline in the growth rate in 2017, respectively.

TAL:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.

b. Please explain why the divergence in the growth rates of customers and retail energy sales is projected to increase during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2013, and the decline in the growth rate in 2017, respectively.

17. **[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.

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

JEA included Plug-in Electric Vehicle (PEV) in the forecast used for this TYSP. JEA's forecasted AAGRs for PEV winter and summer coincidental peak demand and total energy are approximately 13 percent during the TYSP period. JEA will continue to monitor PEV technology and its impact on JEA's load forecast.

19. 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 (70% of battery capacity) per vehicle was determined based on the current plug-in vehicle models in Duval County, such as BMW, General Motors' Chevrolet and Cadillac, Honda, Fisker, Ford, Mitsubishi, Nissan, Porsche, Tesla, Toyota 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 0.08 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 0.03 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 and summer coincidental peak demand and total energy are approximately 13 percent during the TYSP period

20. **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. "Quick-charge" 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.

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

JEA offers rebates for the purchase of plug-in electric vehicles, $500 for a battery less than 15 kWh and $1,000 for 15 kWh and higher. At this time, JEA does not have any new or additional programs or tariffs planned within the current planning period.

a. Of these programs or tariffs, are any designed for or do they include educating customers on electricity as a transportation fuel?
Not at this time

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.
Not at this time

22. Please describe how the Company monitors the installation of PEV public charging stations in its service area.

JEA monitors charging stations through application web sites such as DOE, PlugShare and Chargepoint. Per PlugShare, there are 80 public charging stations ranging between Level 1

to Supercharger within JEA's service area. Included are 20 "DC Fast" electric vehicle charging stations as shown in the table below.

23. 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.

24. 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.

None to date.

25. 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?

No processes or technologies are in place at this time.

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 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.

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 usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.**

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

28. [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.

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

Generation & Transmission

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 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.

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 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.

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

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 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.

32. 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.

Data provided in excel file.

33. 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.

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 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.

Data provided in excel file.

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 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 no PPA with a traditional generator in the current planning period.

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 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.

Data provided in excel file.

37. 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 thirteen (13) purchased power agreements with solar PV generators, of which eight (8) are online and operating, and five (5) are undergoing permitting.

38. 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) shifted due to procurement delays and the COVID-19 pandemic. All sites are currently still expected to energize in 2021.

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 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

40. 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

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

N/A

42. 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.

Data provided in excel file.

43. **[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

44. 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.

45. **[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

46. 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 peaks.

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

JEA has continuously observed market trends showing battery energy storage costs declining. Current trends show all-in prices around $300/kWh, with a decline to $200/kWh by 2025. It is important to distinguish the difference between pack price, the price for the batteries themselves, and all-in price, which accounts for interconnection, management systems, balance of systems, etc. Pack pries are currently about $156/kWh with an expected decline to approximately $100/kWh by 2023. Lithium ion technology continues to be the leader, with much of the cost reduction attributed to the growth of the electric vehicle market.

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

JEA has observed rising potential in other emerging battery technologies. Flow battery systems can last for about 20 years and can maneuver long and short duration storage applications. Roundtrip efficiencies are lower, however, compared to lithium ion. Companies like Avalon and ViZn have made strides in commercializing the technology, though, there is still progress to be made.

Power to Gas (P2G) is another emerging technology. Excess renewable energy is used to convert water to hydrogen gas, known as "renewable hydrogen", through electrolysis. This hydrogen gas can then be used to power a fuel cell, be stored for later use in another application, or converted to natural gas through methanation. Essentially, the excess renewable energy that could be stored in a battery system is used to create fuel to power other systems. P2G's lower efficiencies create a challenge in making the technology lithium ion competitive.

Several other technologies have not reached a level of stable commercialization as lithium ion, including solid state and salt-water batteries. JEA will continue to monitor battery technology trends as they evolve.

49. 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.

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

JEA formulated the Battery Incentive Program (BIP) 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.

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 that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.

Data provided in excel file

52. 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.

Data provided in excel file.

53. 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 is investigating a storage pilot project to provide resiliency to the wastewater systems, by way of a solar plus storage system deployed at a JEA lift station for backup power in the event of a grid outage. After severe weather events, when the grid is down, the system can power

the lift station until grid power is restored. When not in use, the storage system can provide grid support, as needed.

Risks associated with pursuing this pilot project include possible corrosion of equipment in the event of chemical exposure, and potential fire hazard with the battery storage system in the event of failure. As battery technology matures and battery energy management systems continue to improve, JEA anticipates the risk of fire hazard to decrease as battery chemistries and technologies evolve.

The project is still in the research phase, with preliminary sizing analysis completed. JEA is looking to leverage existing partnerships with research firms, national labs, and other municipal utilities to obtain federal funding towards the pilot project. Once JEA finalizes its plans for the pilot, the Commission will be notified.

54. 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 currently does not assign a capacity value to solar PV and storage systems solely charged by non-firm generation sources, such as solar PV, 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.

55. 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 in 2021. 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 2021. 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

56. 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.

57. **[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.**

58. 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.

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

59. 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.

60. 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.

61. **[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.**

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 repowering to operation as Combined Cycle units.**

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 information on all of the Company's steam units that are potential candidates for fuel-switching.**

Data provided in Excel file.

64. **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

65. **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.**

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.

The ACE rule directly impacts JEA Northside Generating Station's Units 1 and 2. As long as Florida considers unit-specific factors such as the remaining useful life of the unit and cost to comply, and incorporates compliance flexibility, Units 1 and 2 should be able to comply with the new standards. JEA is assessing its baseline CO2 emissions for these units and evaluating the potential HRI measures, working closely with the Florida Coordinating Group (FCG) as well as the FDEP who is the permitting authority for the State of Florida.

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 YYYY (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.

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

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

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

b. What compliance strategy does the Company anticipate employing for the rule?
A regulatory analysis must be done for any proposed new or modified EGUs

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

d. 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.

e. 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.

67. 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.

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

None anticipated

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 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.

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 the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.

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. No retirements, curtailments, or installation of additional emission controls are expected to be required as a results of currently proposed or finalized rules. The ACE rule may require new equipment and/or operational changes but it is not known at this time.

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: 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.

70. 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.

Cannot determine timing at this time.

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

Fuel Supply & Transportation

72. 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.

73. 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.

74. 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 has ownership in Scherer Unit 4 which burns Powder River Basin (PRB) coal. 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 U.S. will continue to rely on onshore unconventional natural gas sources because of strong domestic production and storage. Natural gas is used as a primary fuel at four of JEA's existing electric generation facilities. Over the forecast period, JEA will benefit from the increasing contribution from unconventional gas supplies that will help insure sufficient availability of natural gas in the future.

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 2020 through 2029 period, JEA expects the petroleum coke market to typically trade at a discount to coal.

75. 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.

76. 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 is expected to increase in 2020 with the completion of Sabal Trail project phase II.

77. 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 EIA's Annual Energy Outlook 2020, the United States transitioned to a net exporter of natural gas on an average annual basis in 2017 and continues to export more natural gas than it imports in 2018 and 2019. The expected increase in LNG exports is supported by differences between international and domestic natural gas prices. The United States is expected to remain a net natural gas exporter through 2050. An increase in U.S. LNG export volume could potentially reduce the quantity of natural gas available and as a result cause an increase in price. Despite projected increases in natural gas exports, 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.

78. 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.

79. 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.

80. 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.

81. 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

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

Existing Generating Unit Operating Performance

		Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
Plant Name	**Unit No.**	**Historical**	**Projected**	**Historical**	**Projected**	**Historical**	**Projected**	**Historical**	**Projected**
Kennedy GT	7	0.91%	2.77%	0.93%	5%	98.03%	92.23%	12,697	10,368
Kennedy GT	8	3.99%	1.81%	0.47%	5%	95.37%	93.19%	11,527	10,353
Northside	1	10.89%	7.01%	0.29%	3%	86.11%	89.99%	10,235	9,653
Northside	2	7.01%	9.22%	4.04%	3%	81.07%	87.78%	11,262	9,447
Northside	3	6.40%	5.34%	1.65%	3%	90.54%	91.66%	10,790	10,716
Northside GT	33	0.04%	2.49%	1.38%	5%	97.58%	92.51%	21,240	13,980
Northside GT	34	0.01%	2.38%	0.10%	5%	98.79%	92.62%	23,638	13,980
Northside GT	35	0.00%	1.15%	0.00%	5%	89.82%	93.85%	23,465	13,980
Northside GT	36	6.32%	1.15%	0.30%	5%	92.78%	93.85%	23,111	13,980
Brandy Branch GT	1	7.05%	3.04%	2.02%	5%	90.68%	91.96%	11,325	10,131
(Brandy Branch CC)	(2,3,4)	10.42%	2.90%	0.71%	3%	87.58%	94.10%	6,934	6,490
GEC GT	1	3.40%	2.05%	1.17%	5%	95.27%	92.95%	11,134	10,375
GEC GT	2	3.12%	2.54%	0.20%	5%	96.41%	92.46%	11,021	10,367

Nominal, Firm Purchases

	Firm Purchases	
Year	$/MWh	Escalation %
HISTORY:		
2017	46.84	14.69%
2018	45.3	-3.29%
2019		
FORECAST:		
2020		
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		

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:		%

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

Year	Annual Isolated Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Annual Isolated Expected Unserved Energy (MWh)	Annual Assisted Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Annual Assisted Expected Unserved Energy (MWh)
2020	0.0010	16%	200	N/A	N/A	N/A
2021	0.0009	16%	1600	N/A	N/A	N/A
2022	0.0005	18%	200	N/A	N/A	N/A
2023	0.0009	21%	200	N/A	N/A	N/A
2024	0.0002	20%	0	N/A	N/A	N/A
2025	0.0003	19%	0	N/A	N/A	N/A
2026	0.0003	19%	600	N/A	N/A	N/A
2027	0.0006	18%	0	N/A	N/A	N/A
2028	0.0007	17%	100	N/A	N/A	N/A
2029	0.0004	16%	0	N/A	N/A	N/A

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
2020	2%	2%	2%	2%
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%

TYSP Year 2020
Staff's Data Request # 1
Question No. 7

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System Average Temperature (Degrees F)
2019	1	2475	0	2475	31	0	43
	2	1936	0	1936	14	0	53
	3	2120	0	2120	6	0	46
	4	1969	0	1969	30	1	74
	5	2584	0	2584	28	1	85
	6	2643	0	2643	24	1	86
	7	2643	0	2643	2	1	88
	8	2644	0	2644	14	1	87
	9	2556	0	2556	9	1	86
	10	2256	0	2256	4	1	77
	11	1834	0	1834	7	1	78
	12	2098	0	2098	19	0	47
2018	1	3080	0	3080	8	0	39
	2	1956	0	1956	1	0	55
	3	2000	0	2000	15	0	50
	4	1819	0	1819	3	1	73
	5	2242	0	2242	31	1	81
	6	2511	0	2511	4	1	84
	7	2535	0	2535	13	1	85
	8	2557	0	2557	8	1	87
	9	2556	0	2556	19	1	84
	10	2354	0	2354	17	1	85
	11	2144	0	2144	28	0	44
	12	2367	0	2367	12	0	47
2017	1	2480	0	2480	9	0	32
	2	1770	0	1770	17	0	38
	3	2282	0	2282	16	0	34
	4	2325	0	2325	28	1	88
	5	2421	0	2421	30	1	73
	6	2507	0	2507	23	1	90
	7	2637	0	2637	5	1	92
	8	2682	0	2682	16	1	95
	9	2455	0	2455	27	1	87
	10	2386	0	2386	10	1	87
	11	1790	0	1790	7	1	85
	12	2378	0	2378	11	0	34

Notes

(Include Notes Here)

Historic Peak Demand

TYSP Year 2020
Staff's Data Request # 1
Question No. 20

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public "Quick-charge" PEV Charging Stations	Cumulative Impact of PEVs		
				Summer Demand	Winter Demand	Annual Energy
				(MW)	(MW)	(GWh)
2020	1801	91		1.44	0.28	7.32
2021	2115	105		1.69	0.33	9.10
2022	2438	120		1.96	0.38	10.56
2023	2767	135		2.23	0.43	12.06
2024	3106	150		2.51	0.49	13.61
2025	3456	166		2.80	0.55	15.22
2026	3820	182		3.11	0.60	16.90
2027	4196	199		3.43	0.67	18.65
2028	4589	217		3.77	0.73	20.49
2029	4997	235		4.12	0.80	22.41

Notes

1) Number of public PEVs includes quick charge stations.
2) Number of EVs in Duval County from Florida Department of Highway Safety and Motor Vehicles (DHSMV).
3) Number of public charging stations from PlugShare.com for stations installed by Business and Government
4) Coincidental EVs Summer/Winter Peak Demand at time of JEA System Summer/Winter Peak.

TYSP Year	2020
Staff's Data Request #	1
Question No.	26

[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
2010									
2011									
2012									
2013									
2014									
2015									
2016									
2017									
2018									
2019									
Notes									
JEA has no demand response programs; therefore, there was no participation									

TYSP Year	2020
Staff's Data Request #	1
Question No.	27

[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	
2010											
2011											
2012											
2013											
2014											
2015											
2016											
2017											
2018											
2019											
Notes											
JEA has no demand response programs; therefore, there was no participation											

TYSP Year	2020
Staff's Data Request #	1
Question No.	28

[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)
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
Notes							
JEA has no demand response programs; therefore, there was no participation							

TYSP Year 2020
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)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
BRANDY BRANCH	CT2	DUVAL	CT	NG	5	2001	190.5	210	189.84	209.33			90.09%
BRANDY BRANCH	CT3	DUVAL	CT	NG	10	2001	190.5	210	189.84	209.33			90.09%
BRANDY BRANCH	GT1	DUVAL	GT	NG	5	2001	150.5	192.7	149.9	191.2			6.24%
BRANDY BRANCH	STM4	DUVAL	CA	WH	1	2001	225	225	216.34	216.08			90.09%
GREENLAND ENERGY CTR	GT1	DUVAL	GT	NG	6	2011	149.9	192.7	149.9	191.2			13.25%
GREENLAND ENERGY CTR	GT2	DUVAL	GT	NG	6	2011	149.9	192.7	149.9	191.2			7.50%
J. D. KENNEDY	GT7	DUVAL	GT	NG	6	2000	150.5	192.7	149.9	191.2			2.54%
J. D. KENNEDY	GT8	DUVAL	GT	NG	6	2009	150.5	192.7	149.9	191.2			1.06%
NORTHSIDE	1	DUVAL	ST	PC	5	2003	310	310	293	293			64.71%
NORTHSIDE	2	DUVAL	ST	PC	4	2003	310	310	293	293			68.10%
NORTHSIDE	3	DUVAL	ST	NG	6	1977	540	540	524	524			37.08%
NORTHSIDE	GT3	DUVAL	GT	DFO	1	1975	50.4	62	50	61.6			0.12%
NORTHSIDE	GT4	DUVAL	GT	DFO	1	1975	50.4	62	50	61.6			0.12%
NORTHSIDE	GT5	DUVAL	GT	DFO	12	1974	50.4	62	50	61.6			0.12%
NORTHSIDE	GT6	DUVAL	GT	DFO	12	1974	50.4	62	50	61.6			0.12%
SCHERER	4	MONROE, GA	ST	BIT	2	1989	210	210	198	198			60.52%
Notes													
(Include Notes Here)													

TYSP Year	2020
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)		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.													

TYSP Year 2020
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)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
NONE													
Notes													
(Include Notes Here)													

TYSP Year 2020
Staff's Data Request # 1
Question No. 32

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
NONE													
Notes													
(Include Notes Here)													

TYSP Year	2020
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
SOU	Wansley		Heard	CC	NG	200	200	200	200	200	200	01/01/2018	01/01/2020
Notes													
(Include Notes Here)													

TYSP Year	2020
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
Notes													
JEA has no PPA with a traditional generator in the current planning period.													

TYSP Year 2020
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
NPPD[(2)]	Ainsworth Wind Energy Facility	**N/A**	Brown	Wind	Wind	10	10	10	10	10	10	10/04	12/19
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	9/29/204
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
Cecil Commerce Solar Partners, LLC	Cecil Commerce Solar Center	**N/A**	Duval	Solar PV	SUN	50	50	50	50	0	0	05/21	05/46
Forest Trail Solar Partners, LLC	Forest Trail Solar Center	**N/A**	Duval	Solar PV	SUN	50	50	50	50	0	0	12/21	12/46
Deep Creek Solar Partners, LLC	Deep Creek Solar Center	**N/A**	Duval	Solar PV	SUN	50	50	50	50	0	0	08/21	08/46
Westlake Solar Partners, LLC	Westlake Solar Center	**N/A**	Duval	Solar PV	SUN	50	50	50	50	0	0	07/21	07/46
Beaver Street Solar Partmers, LLC	Beaver Street Solar Center	**N/A**	Duval	Solar PV	SUN	50	50	50	50	0	0	10/21	10/46

Notes

(1) Solar capacity based on AC rating.

(2) Power not delivered to JEA; sold to third party. Contract ended 12/31/2019.

TYSP Year 2020
Staff's Data Request # 1
Question No. 37

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													
(Include Notes Here)													

TYSP Year	2020
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													

TYSP Year 2020
Staff's Data Request # 1
Question No. 40

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													

TYSP Year	2020
Staff's Data Request #	1
Question No.	42

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
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	0	0	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	146	212	403	812	810	809	804	801	669	667	663
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	146	212	403	812	810	809	804	801	669	667	663
Notes											
(Include Notes Here)											

TYSP Year	2020
Staff's Data Request #	1
Question No.	43

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

Potential Solar Sites

TYSP Year 2020
Staff's Data Request # 1
Question No. 51

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
SunPort Solar	N	12/4/2019	2	4	90
JEA Battery Incentive Program	N	1-Apr-18	0.4 MW	0.7 MWh	N/A
Notes					
(Include Notes Here)					

TYSP Year	2020
Staff's Data Request #	1
Question No.	52

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 (%)
Lift Station Resiliency Project	Y	TBD	TBD	TBD	TBD
JEA Battery Incentive Program	N	1-Apr-18	No Projection	No Projection	N/A

Notes
(Include Notes Here)

TYSP Year	2020
Staff's Data Request #	1
Question No.	57

Year		As-Available Energy ($/MWh)	On-Peak Average ($/MWh)	Off-Peak Average ($/MWh)
Actual	2010			
	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
Projected	2020			
	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
Notes				
N/A				

TYSP Year	2020
Staff's Data Request #	1
Question No.	58

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.				

TYSP Year 2020
Staff's Data Request # 1
Question No. 60

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Brandy Branch	(2,3,4)	CC	NG	70.4	94.3	91.8	91.9	86.4	91.5	88.8	89.2	86.3	90.7	90
Brandy Branch	GT1	GT	NG	9.3	10.2	8.1	5.5	5.6	4.6	3.4	4.6	8.7	7	4.7
GEC	GT1	GT	NG	10.4	18.6	20.3	13.3	9.6	10.8	10.3	10.7	13.3	14.4	11.2
GEC	GT2	GT	NG	18	10.9	12.6	8.3	5	5.5	5.2	5.5	7.3	9.1	5.6
Kennedy	GT7	GT	NG	9.7	3.5	4.8	2.9	1.8	1.4	1.6	1.9	2.4	3.4	1.7
Kennedy	GT8	GT	NG	3.6	1.1	2.5	1.5	0.8	0.6	0.5	0.7	0.7	1.4	0.8
Northside	1	ST	PC	73.1	63.4	63.9	56.8	52.2	53.1	67.7	68.8	74.1	72.7	74.4
Northside	2	ST	PC	14	73.6	73.7	58.6	59.6	59.3	69.7	72.1	67.9	71.5	75
Northside	3	ST	NG	38.8	60.2	49.3	46.4	42.1	40.5	28	26.4	27.6	24.9	25.4
Northside	GT3	GT	DFO	0.1	0.2	0.3	0.1	0.1	0	0	0.1	0.1	0.2	0.1
Northside	GT4	GT	DFO	0.1	0.2	0.3	0.1	0.1	0	0	0.1	0.1	0.2	0.1
Northside	GT5	GT	DFO	0.1	0.2	0.3	0.1	0.1	0	0	0.1	0.1	0.2	0.1
Northside	GT6	GT	DFO	0.1	0.2	0.3	0.1	0.1	0	0	0.1	0.1	0.2	0.1
Scherer	4	ST	BIT	53.4	43.1	61	50.9	56.1	50.5	64.3	62.3	75.5	67.3	74.2
Notes														
(Include Notes Here)														

TYSP Year	2020
Staff's Data Request #	1
Question No.	62

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Northside 3	NG/FO6	524	Jul-77	Combined Cycle	Resulting unit size too large
Kennedy CT 7	NG/FO2	150	Jun-00	Combined Cycle	
Kennedy CT 8	NG/FO2	150	Jun-09	Combined Cycle	
Brandy Branch CT 1	NG/FO2	150	May-01	Combined Cycle	
GEC CT 1	NG	142	Jun-11	Combined Cycle	
GEC CT 2	NG	142	Jun-11	Combined Cycle	
Notes					
(Include Notes Here)					

TYSP Year	2020
Staff's Data Request #	1
Question No.	63

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
NORTHSIDE 1	PC	293	May-03	NG	
NORTHSIDE 2	PC	293	Apr-03	NG	
NORTHSIDE	GT3	50	Jan-75	NG	
NORTHSIDE	GT4	50	Jan-75	DFO	
NORTHSIDE	GT5	50	Dec-74	DFO	
NORTHSIDE	GT6	50	Dec-74	DFO	
Notes					
(Include Notes Here)					

TYSP Year	2020
Staff's Data Request #	1
Question No.	64

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

TYSP Year 2020
Staff's Data Request # 1
Question No. 66 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
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
Notes				
N/A				

TYSP Year	2020
Staff's Data Request #	1
Question No.	68

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
NGS1	ST	PC	293 MW	N/A	Heat Rate Improvement Projects	Periodic Monitoring and Testing	N/A	Possible additional equipment	N/A	N/A
NGS2	ST	PC	293 MW	N/A	Heat Rate Improvement Projects	Periodic Monitoring and Testing	N/A	Possible additional equipment	N/A	N/A
Scherer	ST	BIT	200 MW	Additional Equipment	Heat Rate Improvement Projects	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										
Closure rules for SJRPP										

TYSP Year	2020
Staff's Data Request #	1
Question No.	69

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	70

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

TYSP Year 2020
Staff's Data Request # 1
Question No. 72

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2010	N/A	N/A	9287	3.19	2963	5.74	84.00	11.27	18.00	16.88
	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	9.66	4.00	14.85
Projected	2020	N/A	N/A	4275	2.28	8390.6	2.51	N/A	N/A	4.50	13.58
	2021	N/A	N/A	4589	2.58	7792.3	2.83	N/A	N/A	6.60	13.90
	2022	N/A	N/A	3843	2.78	7413.4	2.92	N/A	N/A	2.70	13.93
	2023	N/A	N/A	3842	2.79	6803.2	3.01	N/A	N/A	1.90	13.75
	2024	N/A	N/A	3773	2.82	7018	3.17	N/A	N/A	0.80	13.74
	2025	N/A	N/A	4640	2.90	6250.2	3.47	N/A	N/A	0.10	13.54
	2026	N/A	N/A	4697	2.95	6234.4	3.80	N/A	N/A	1.70	13.95
	2027	N/A	N/A	4955	3.02	6270.3	4.04	N/A	N/A	1.70	14.18
	2028	N/A	N/A	4881	3.05	6436.1	4.21	N/A	N/A	3.80	14.67
	2029	N/A	N/A	5121	3.10	6240.2	4.31	N/A	N/A	1.00	15.09

Notes

Coal includes Colombian coal, PRB coal and Petcoke