nFRONT CONSULTING LLC
Power Industry Planners • Analysts • Advisors

May 18, 2020

Doug Wright and Donald Phillips
Florida Public Service Commission
Office of Commission Clerk
2540 Shumard Oak Blvd
Tallahassee, Florida 32399-0850

Subject: Orlando Utilities Commission (OUC) Responses to DN 20200000-OT - Review of the 2020 Ten-Year Site Plans for Florida's Electric Utilities - Data Request #1

Dear Mr. Wright and Mr. Phillips

Enclosed please find the Orlando Utilities Commission (OUC)'s responses to the subject data request. Word and Excel versions of the responses have been emailed to you as well.

If you have any questions about these responses, please do not hesitate to contact me.

Respectfully submitted,

/s/ Bradley Kushner

Bradley Kushner
Executive Consultant
nFront Consulting LLC
BradKushner@nFrontConsulting.com
(816) 547-1637

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.**

   OUC Response:
   The requested information was provided to the Florida Public Service Commission on April 1, 2020.

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

   OUC Response:
   The requested information was provided to the Florida Public Service Commission on April 1, 2020.

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.**

   OUC Response:
   Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file).

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.**
   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.**

   OUC Response:
   CO_2 compliance costs have not been included in the resource planning process used to generate the resource plan presented in OUC's 2020 TYSP.

Flood Mitigation

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

OUC Response:
For each existing power plant site and transmission/distribution substation, the need for flood mitigation was one of the factors considered during the evaluation and planning process for the site and transmission/distribution substation. Similarly, for future power plant sites and transmission/distribution substations, the likelihood of flood mitigation being required is considered during site acquisition and planning.

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.

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Historic Peak Demand". The table presents the monthly coincident peak demands for OUC and the City of St. Cloud combined; the date, day of the week and hour when these monthly peak demands occurred; and the temperature at the time of these peaks.

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.

OUC Response:
System-wide temperature data for OUC's service territory is based on information obtained from the Pine Hills weather station, which was the only weather station used.

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.

OUC Response:
OUC prepares a set of sales, energy, and demand forecast models each year to support OUC's budgeting and financial planning process as well as long-term planning requirements.
In preparing the forecasts OUC uses:

- internal records
- company knowledge of the service territory and customers
- economic projections from IHS Markit, Inc.
- weather data from the National Oceanic and Atmospheric Administration (NOAA) collected at the Orlando International Airport weather station
- future "normal" weather was assumed to be equal to the annual 20 year median HDD and CDD calculated for the period January 1, 1999 through December 31, 2018.
- OUC draws on outside expertise as needed:
    - economic projection data was provided by IHS Markit, Inc.
    - software, analysis of end-use equipment and efficiencies, analysis of forecast accuracy, and technical expertise was provided by Itron, Inc.
    - electric vehicle forecast technical expertise was provided by Siemens
    - rooftop solar forecasts were provided by the National Renewable Energy Laboratory

A detailed explanation of OUC's forecasting methodology is included in Section 4 of OUC's 2020 Ten-Year Site Plan.

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.

OUC Response:
There are no closed or opened FPSC dockets or non-docketed FPSC matters based on the same load forecast used in OUC's 2020 TYSP.

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.

OUC Response:
As part of OUC's Operating Budget variance reporting, OUC compares actual customer counts and sales for the current fiscal year to the corresponding forecast data utilized in the operating budget. OUC does not have a formal process to evaluate the accuracy of the data forecasted two or more years ago.

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.

OUC Response:
OUC tracks its actual Summer/Winter Peak Energy Demand on an ongoing basis and utilizes these demands in its forecast. Since 2012, OUC has consistently been a summer peaking utility and has had well in excess of a 15 percent reserve margin. As part of the annual forecasting process the new 10-year Summer Peak Energy Demand is compared to the previous year's 10-year forecast and any sizable variances are investigated.

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.

OUC Response:
From 2010 through 2019, inclusive of St. Cloud, OUC's average annual residential, commercial, and total customer growth rates were 2.2%, 0.9%, and 2.0%, respectively.

Residential customer growth for OUC and St. Cloud is primarily driven by the growth in the number of Orange and Osceola county households, respectively. Based on household growth projections, residential customers, inclusive of St. Cloud, are forecasted to grow 1.8% on average over the 2020 to 2029 period.

Commercial customer growth for OUC and St. Cloud is primarily driven by population growth in Orange and Osceola counties, respectively. Based on population growth projections, commercial customers, inclusive of St. Cloud are forecasted to grow 1.3% on average over the 2020 to 2029 period.

For additional details on the forecast number of households and population by county see Table 4-1 in OUC's 2020 Ten-Year Site Plan. For additional details on the forecast OUC and St. Cloud residential, commercial, and total customer growth rates, see Tables 4-3 and 4-5 in OUC's 2020 Ten-Year Site Plan.

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.

OUC Response:

The average OUC residential customer weather normalized usage per month declined from approximately 1,000 kWh/month in 2009 to approximately 920 kWh/month in 2019, an average annual decline of 0.8%. The decline in average use per residential customer is expected to continue through the end of the forecast period at an average annual rate of 0.2% per year. The declining use per customer is driven by the increasing efficiency of HVAC and other electrical devices as well as customer conservation efforts. Commercial sales have shown a long term declining use per customer trend. The average OUC weather normalized usage per commercial customer declined approximately 0.3% annually from 2009 through 2019 but is expected to remain relatively flat through the end of the forecast period.

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.

OUC Response:
Net Energy for Load had an average annual growth of 1.5% from 2010 to 2019 and is projected to grow at an average annual rate of 1.6% from 2020 to 2029. The main drivers for a higher growth rate than in the past are due to projected growth in electric vehicle charging load and major commercial expansions from Universal and the Orlando International Airport that are largely outside of normal growth. OUC does not have a demand management program but has experienced a decline in Net Energy for Load growth through various conservation/energy-efficiency programs such as rebates for appliances with higher efficiencies and home energy surveys, as outlined in Section 5 of OUC's 2020 10-Year Site Plan.

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.

OUC Response:
The forecast provided by OUC includes assumptions for appliance efficiency and saturation related to heating, cooling and other electric load. These assumptions capture historical and projected changes in codes and standards and are used as inputs to the statistically adjusted end-use ("SAE") multi-regression modeling technique developed by Itron, Inc. Additionally, the multi-regression models also capture the impacts of Conservation above the requirements of the codes and standards. While the forecast takes into account the total Conservation impacts it does not explicitly differentiate between what's required by changes in codes and standards and Conservation impacts in excess of the requirements.

The forecast provided by OUC includes assumptions for Self Service, specifically, customer sited, rooftop, solar photovoltaic installations. These assumptions capture historical and projected Self Service load. Historic Self Service load has not been significant. Projected Self Service load for the forecast period was provided by the National Renewable Energy Lab as part of a recent study performed on OUC's service territory. Residential Self Service load is projected to grow at an average annual rate of 0.2% 2020 to 2029 while commercial Self Service load is projected to grow at a minimal rate over the same period.

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.

OUC Response:

OUC does not offer demand response programs, so this question is not applicable.

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

OUC Response:

In addition to the answer shown in response to Question No. 14d, the decline in Total Demand is due to wholesale agreements with Bartow, Lake Worth, Winter Park and FPL expiring within the forecast period.

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.

OUC Response:
Long term, the combined OUC & St. Cloud system peak is expected to grow along with the system net energy for load (NEL) at approximately the same rate. For 2020 – 2029, NEL is expected to average 1.7% growth annually while the system peak is expected to average 1.9% growth. The small difference in growth rates is attributable to a marginal decrease in the system load factor, from 59.5% in 2020 to 58.9% in 2029, occurring from large commercial expansions expected within this period. Increasing customer conservation along with increasing HVAC and other appliance efficiencies have the potential to increase the system load factor slightly across the planning horizon.

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.

OUC Response:
OUC is not aware of any such anomalies within the historical 10-year period.

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.

b. Please explain why the divergence in the growth rates of customers and retail energy sales 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 2011-2013, and the decline in the growth rate in 2017, respectively.

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.

OUC Response:
For the 2020 to 2029 period average annual customer growth is forecasted to outpace sales growth by approximately 0.1 percentage points annually. The principal drivers for this difference are an increase in the ratio of multi-family residential customers versus single-family residential customers, continued appliance efficiency improvements, and the effects of rooftop solar installations partially mitigated by increased electric vehicle charging.

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

OUC Response:
The 1.7 percent decline in retail energy sales between 2011 and 2012 is partially attributable a 5.1 percent decline in residential average kWh consumption per customer. Also contributing to the over decline was a 1.8 percent decrease in total cooling and heating degree days for the same period.

The 0.5 percent decline in retail energy sales between 2016 and 2017 is attributable to a 6.9 percent decline in total cooling and heating degree days for the same period.

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.**

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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?

OUC Response:
The historical loads associated with existing PEVs are included in the historical load data by class and impact the demand and energy projections. The current demand and energy forecasts for the 2020 TYSP have included additional PEV load growth in both the residential class and commercial class forecasts to capture increasing saturation of the total vehicle market.

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.

OUC Response:

OUC's forecast includes the project impacts of electrification of both light duty vehicles (LDV) and heavy duty vehicles (HDV). The following describes the methodology and assumptions used in the LDV forecast.

Florida's population was divided by the actual number of Florida registered vehicles, provided by IHS Markit, to obtain Florida vehicles per capita. The Florida vehicles per capita amount was applied to the IHS Markit OUC population projections to estimate the number of total vehicles within OUC's service territory over the forecast period. Annual new car sales for OUC's service territory were determined by adding the growth in total vehicles to the number of vehicles annually removed from service. A PEV market share was then applied to the new car sales estimate for OUC's service territory to determine the number of PEV additions. A

survival curve was applied to the additions to remove PEVs from service at the end of their useful life. The market share assumptions were provided by Siemens and represents a projection of national PEVs sales as a percentage to total LDV sales. Additionally, Siemens provided the survival rate curve.

Demand and energy impacts were then based on each PEV driving an assumed 12,000 miles per year and charging of 30 kWh per 100 miles driven, resulting in an annual 3,600 kWh per PEV. 30 kWh was based on the median of a sample of seven different models of PEVs. PEVs impact on demand was forecast to have an equal percentage impact as that on sales. As more information becomes available, OUC will incorporate into future forecasts. The forecast PEV energy impacts were manually added to the residential sales forecast.

Siemens followed a similar methodology when they developed OUC's HDV forecast which was manually added to the commercial & industrial sales forecasts.

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.

OUC Response:
OUC has supported the installation of 140 public charging stations and has installed 4 DC fast charger EV charging stations in its service territory. At this time, public charging station deployment on the OUC system is expected to meet the public's need for several years into the future. Given the changing technology and uncertainty of electric vehicle deployment, the number of additional charging stations that will be required by the public is considered speculative and no long-term projection has been made at this time. Since no long-term projection has been made, the requested table has been left blank.

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

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

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

OUC Response:
OUC currently offers a $200 rebate to customers who purchase or lease a plug-in electric vehicle. OUC does not currently offer any tariffs specific to electric vehicle charging. OUC is in the process of re-developing its EV incentive program.

OUC has formed an educational subcommittee for electrification of transportation. In addition, OUC:

- conducts Ride and Drive events,
- maintains a web portal for information on purchasing PEVs, and
- has internal and external marketing campaigns

OUC does not yet have any programs for customers to express interest in PEV infrastructure provided by OUC.

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

OUC Response:
OUC provides support for the installation of PEV public charging stations upon notification by the installer or when permits are issued.

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.

OUC Response:
OUC has had one instance where distribution upgrades were needed in order to accommodate the installation of two public charging stations.

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.

OUC Response:
OUC has not conducted or contracted any research to determine demographic and regional factors that influence the adoption of electric vehicles applicable to its service territory.

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?

OUC Response:
OUC is notified if the customer applies for a PEV rebate. OUC also reviews meter data for a Level 2 charging signature.

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.

OUC Response:
OUC does not currently offer demand response programs to its customers.

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.

OUC Response:
OUC does not currently offer demand response programs to its customers.

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.

OUC Response:
OUC does not currently offer demand response programs to its customers.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Utility Existing Traditional".

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.

OUC Response:
OUC does not have any traditional generation resources 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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Utility Existing Renewable".

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.

OUC Response:
OUC does not currently have plans for new utility-owned renewable resources planned for in-service within the current planning period.

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?

OUC Response:
OUC has not had any planned utility-owned renewable resources within the past year that were cancelled, delayed, or reduced in scope.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PPA Existing Traditional".

OUC's only PPA with a traditional generator that was in effect by December 31, 2019 is with NextEra Energy (formerly with Southern-Company Florida, LLC) for capacity and energy from Stanton Energy Center Unit A.

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.

OUC Response:
OUC does not currently have plans for any purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered during 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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PPA Existing Renewable".

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PPA Planned Renewable".

- Florida Municipal Solar Project. New solar farms in Osceola and Orange counties are expected to begin commercial operations in late 2020.
- Invenergy Solar Project. New solar farms in Osceola County are expected to begin commercial operations in late 2022 and late 2023.

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?

OUC Response:
No renewable purchased power agreements were cancelled, delayed, or reduced in scope in the past year.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PSA Existing".

As outlined in Section 2.0 of OUC's 2020 TYSP, OUC's power sales agreements in effect on December 31, 2019 consist of agreements with the City of Bartow, the City of Lake Worth Beach, the City of Winter Park, and Florida Power & Light.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PSA Planned".

As outlined in Section 2.0 of OUC's 2020 TYSP, OUC's power sales agreements that will go into effect during the current planning period consist of agreements with the City of Mt. Dora and the City of Chattahoochee.

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

OUC Response:
No long-term power sale agreements were cancelled, expired, or modified in the past year.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Annual Renewable Generation".

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.

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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

OUC Response:
OUC offers Solar PV incentive programs to Residential and Commercial Customers. The Solar PV programs provide net-metering at OUC's retail rate. Solar PV customers that were eligible under OUC's tariff for its PV production credit incentive received a $0.05/kWh credit for each

kWh produced by the Customers' Solar PV System. In return for the production credit, OUC owns the RECs. OUC ended the PV production credit incentive for new customers in 2016, while existing customers continue to receive production credits for another 5 years. OUC has developed a Residential Solar Aggregation Program (called OUCollective Solar) designed to offer Customers a more affordable option to install Solar PV on their homes. This program was made available to customers beginning in May, 2018.

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.

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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.

OUC Response:
OUC assumes solar PV contributes 50% of total capacity to summer peak and zero to winter peak. These assumptions are based on historical observations.

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

OUC Response:
OUC currently does not own or operate any energy storage resources; however, OUC has observed declining costs in battery storage systems in the marketplace.

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

OUC Response:
OUC notes with interest the rapidly declining cost and improved performance of lithium battery storage technology. Non-lithium battery storage technology does not seem to have increased at the same pace.

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).

OUC Response:
OUC has not yet installed any energy storage technology in OUC's system.

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

OUC Response:
OUC has received occasional inquiries from solar PV contractors on behalf of ratepayers regarding OUC's procedures pertaining to behind-the-meter batteries coupled with solar PV systems. Such systems are permitted by OUC and are subject to the same vetting process as solar systems without storage. OUC currently has 175 customer interconnected battery storage systems. In November, 2019, OUC started a residential solar battery rebate program, providing rebates of $2,000 to residential solar customers that purchase and install battery storage.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Existing Energy Storage".

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Planned Energy Storage".

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.

OUC Response:
OUC is planning to install an 8 MWh battery storage system at one of its substations in 2021. Once this pilot is in-service, OUC will be evaluate the costs, benefits, risks and operational limitations of the system.

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.

OUC Response:
OUC is currently evaluating opportunities with battery integration with solar PV systems. At this time, OUC does not operational experience with energy storage systems for the purpose of providing firm capacity from non-firm generation.

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.

OUC Response:
In January 2018, OUC introduced a Community Solar program that allows residential and commercial customers to obtain a selected percentage (in increments of 10%) of their monthly electric consumption from OUC's newest solar farm at Stanton Energy Center. The participating customer will be charged a solar rate in lieu of a fuel rate for the percentage of monthly consumption that they select.

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.

OUC Response:
OUC has an emerging technologies group that evaluates and demonstrates the use of new generation, energy storage, and distributed energy technologies. Successful demonstration of such technologies may lead to their larger scale deployment.

Successful implementation of emerging technologies may lead to enhanced reliability and more sustainable production of energy.

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.

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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.

OUC Response:
OUC does not have any planned traditional units with an in-service date within the current planning period.

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.

OUC Response:
OUC does not have any planned traditional or renewable generating units contained in the current planning period TYSP. Therefore, there are no "drop dead" dates to discuss.

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.

OUC Response:
OUC considers the requested information to be confidential and therefore has not provided it in response to this request.

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.

OUC Response:
This question is not applicable as OUC is not an Investor-Owned Utility.

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.

OUC Response:
OUC does not have any steam units that are potential candidates for repowering to operation as combined cycle units.

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.

OUC Response:
OUC is evaluating whether any steam units are potential candidates for fuel switching.

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.

OUC Response:
OUC does not have any proposed transmission lines in the planning period that require certification under the Transmission Line Siting Act.

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.

OUC Response:
The recent State of Florida Startup, Shutdown, and Malfunction (SSM) State Implementation Plan (SIP) call by the US Environmental Protection Agency has the potential for large impacts on OUC's operations. The magnitude and specifics of the impacts, have not yet been determined as the Florida Department of Environmental Protection SIP is currently under review by U.S. EPA.

In June 2019, U.S. EPA issued the Affordable Clean Energy (ACE) Rule as well as a repeal of the Clean Power Plan. The ACE Rule requires states, including Florida, to develop standards of performance to reduce carbon dioxide emissions from existing coal-fired electric generating units. Both Stanton 1 and 2 are subject to the ACE Rule, and a source-specific standard of performance will be established for each unit in accordance with this rule. These standards are developed based on an evaluation of the emission limitations that are achievable by the application of the best system of emissions reduction (BSER). BSER evaluations are currently on-going for both Stanton 1 and 2. Although the ACE Rule is not expected to impact unit dispatch, curtailments, or retirements, until these evaluations are completed the impact of the ACE Rule cannot be fully determined.

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?**
- **b. What compliance strategy does the Company anticipate employing for the rule?**
- **c. If the strategy has not been completed, what is the Company's timeline for completing the compliance strategy?**
- **d. Will there be any regulatory approvals needed for implementing this compliance strategy? How will this affect the timeline?**
- **e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? 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.**
- **f. If the answer to any of the above questions is not available, please explain why.**

OUC Response:

Please see responses below.

a. OUC does not currently have any firm plans related to the addition of new generating units that would be affected by this standard.
b. Not applicable.
c. Not applicable.
d. Not applicable.
e. Not applicable.

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.

OUC Response:
OUC does not anticipate reliability impacts due to EPA rules "a" through "e" and "g" listed above.

Related to EPA rule "f" above, a source-specific standard of performance will be established for each unit under the Affordable Clean Energy (ACE) Rule. These standards are developed based on an evaluation of the emission limitations that are achievable by the application of the best system of emissions reduction (BSER). BSER evaluations are currently on-going for both Stanton 1 and 2. Although the ACE Rule is not expected to impact unit reliability, until these evaluations are completed, the impact of the ACE Rule cannot be fully determined.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "EPA Operational Effects".

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "EPA Cost Effects". The costs shown in the table correspond to the years in which the expenditures occurred.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "EPA Unit Availability".

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.

OUC Response:
OUC evaluated an SCR retrofit for Stanton Energy Center Unit 1 following the upholding of CSAPR by the Supreme Court in April 2014. Prior to postponing the retrofit when CSAPR was vacated by the US 5th Circuit Court, OUC had invested approximately $11 million in the project.

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.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Fuel Usage and Price".

Projected data for 2020 through 2029 reflects dispatch to serve energy required to serve OUC, St. Cloud, City of Bartow, City of Lake Worth Beach, Winter Park, Florida Power & Light, City of Mt. Dora, and City of Chattahoochee load obligations as discussed in Section 2 of OUC's 2020 TYSP, and does not reflect any additional economy energy sales or economy energy purchases. Projected data does not reflect any interaction with the Florida Municipal Power Pool. Fuel prices are not included in the table as OUC considers fuel prices to be proprietary and confidential.

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

OUC Response:
The natural gas and fuel oil price forecasts used in OUC's 2020 Ten-Year Site Plan were developed based on a combination of the NYMEX forward curve and projections provided by PIRA Energy Group (PIRA). PIRA Energy Group was founded in 1976 and is an international energy consulting firm specializing in global energy market analysis and intelligence. Among other services, PIRA offers consulting on a broad range of subjects in the international crude oil, petroleum products, natural gas, electricity, coal, biofuels and emissions markets. PIRA's clients include international and national integrated oil and gas companies, independent producers, refiners, marketers, oil and gas pipelines, electric and gas utilities, industrials, trading companies, financial institutions and government agencies.

The coal price forecast used in OUC's 2020 Ten-Year Site Plan was developed based on projections by Energy Ventures Analysis, Inc. (EVA) for use by OUC as well as recent offers from coal suppliers of Illinois Basin coal. EVA is a consulting firm that engages in a variety of projects for private and public sector clients related to energy and environmental issues. In the energy area, much of EVA's work is related to analysis of the electric utility industry and fuel markets, particularly oil, natural gas, and coal. EVA's clients in these areas include coal, oil, and natural gas producers; electric utility and industrial energy consumers; and gas pipelines and railroads. EVA also works for a number of public agencies, such as state

regulatory commissions, the US Environmental Protection Agency, and the US Department of Energy, as well as interveners in utility rate proceedings, such as consumer counsels and municipalities. Another group of clients include trade and industry associations, such as the Electric Power Research Institute, the Gas Research Institute, and the Center for Energy and Economic Development. EVA has provided testimony to numerous state public utility commissions, including the Florida Public Service Commission. Furthermore, the firm has filed testimony in a number of cases in both state and federal courts, as well as before the Federal Energy Regulatory Commission.

OUC believes that retaining independent entities such as PIRA and EVA to provide their fuel price forecasting expertise, provides authoritative, independent forecasts in and of themselves. One fuel forecast that OUC typically compares its forecast to is the US Energy Information Administration (EIA) Annual Energy Outlook. The fuel price projections provided by PIRA and EVA differ from those presented in the US Energy Information Administration (EIA) Annual Energy Outlook. The forecasting approaches used by PIRA and EVA utilize more current information relative to the information relied upon by the EIA in developing its Annual Energy Outlook, as the scopes of the forecasts developed by PIRA and EVA specifically for OUC are far less broad than the scope of data provided by EIA. The relatively limited scope allows PIRA and EVA to make use of the most current data available and develop forecasts more specific to OUC, rather than a forecast intended to address the US as a whole, as the EIA provides in the Annual Energy Outlook.

OUC continuously reviews other publicly available forecasts and such reviews validate OUC's use of the independent forecasts provided by PIRA and EVA. Furthermore, OUC's generation planning activities include analysis of fuel price sensitivities, which provide an even more comprehensive analysis of fuel prices.

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
b. Natural Gas
c. Nuclear
d. Fuel Oil
e. Other (please specify each, if any)

OUC Response:
The following discussion addresses expected industry trends and factors for the 2020 through 2029 period for coal and natural gas, which are the primary fossil fuel types relied upon by the majority of OUC's generating units. The discussion is based on the US Energy Information Administration's Assumptions for Annual Energy Outlook 2020 (2020 AEO): 2020 Summer Fuels Outlook, Short-Term Energy Outlook (STEO), and Annual Energy Outlook 2020 1st Coal Working Group references, with comparisons to the Annual Energy Outlook 2019 (2019 AEO) Reference case. The overall effect of the trends relative to OUC cannot be determined, as the projections included in 2020 references do not take into account various market factors that may be specific to OUC (i.e. local weather, weather events across the US, the economy,

the impact on demand resulting from possible future legislation related to carbon regulations and/or renewable energy standards, etc.). Additionally, there is additional uncertainty because the impacts of COVID-19 on energy markets are still evolving.

According to the 2020 STEO, the residential natural gas prices average $10.45 per thousand cubic feet in 2019, which is approximately one percent lower than in 2019. In the 2020 AEO, natural gas prices are projected to increase, while remaining relatively low compared to historical prices, as production expands into less prolific and more expensive production areas in order to satisfy the growing demand in natural gas. The relatively low natural gas prices lead to an increasing demand from most end-use sectors. Specifically, the increasing demand from industrial and electric power markets drive a rising domestic consumption of natural gas with comparatively little growth in the residential and commercial sectors. It should be noted that the natural gas prices are highly sensitive to the availability of new technology and resources. The EIA estimates that the End-of-March natural gas working inventories are markedly higher than March 2019 due to production gains and with mild winter conditions.

The U.S became a net exporter of natural gas on an average annual basis in 2017 and continued that trend in 2018 and 2019, according to the 2020 AEO. Furthermore, it is expected that the U.S. will remain a net exporter of natural gas through 2050 as liquefied natural gas (LNG) exports to more distant destinations continues to increase and U.S. natural gas production grows at a faster rate than the consumption. The growth of LNG exports to world markets continues to increase until 2030 and then remains level through 2050. The U.S. natural gas production is projected to grow at an annual average rate of about 1.9% percent from 2020 to 2025, while the U.S. natural gas consumption is expected to remain relatively flat through 2030, leading to an increase in exports of natural gas. After 2030, natural gas consumption grows at a 1.0% per year rate as natural gas use in the electric power sector increases.

U.S. dry natural gas production averaged 92.2 Bcf per day in 2019, establishing a new record level. In 2020, dry natural gas production is forecast to be 91.7 Bcf per day. According to the EIA's STEO, lower U.S. natural gas production along with an increase in natural gas use for power generation will contribute to the projected rise in Henry Hub spot pricing from an average of $2.11/MMBtu in 2020 to $2.98/MMBtu in 2021.

The global oil market is expected to be relatively uncertain in 2020, crude oil prices have fallen significantly since the beginning of 2020. This sharp decline is largely impacted by the economic contraction caused by COVID-19 and a sudden increase in the crude oil supply following the suspension of previously agreed upon production cuts among the OPEC and partner countries[1]. Crude oil spot prices are forecast to average $33 per barrel in 2020 and rise to $46 per barrel in 2021 as a return to declining global oil inventories puts upward pressure on prices. For comparison, crude oil spot prices averaged $64 per barrel in 2019. According to the EIA, the significant drop in global oil demand, combined with the suspension of the

[1] According to the EIA, despite recent news of OPEC emergency meetings to discuss production levels, without an agreement actually in place, the EIA assumes no re-implementation of an OPEC agreement during the forecast period.

OPEC agreement to limit oil production, will be expected to lead to a global oil inventory build more than twice as large as the largest annual inventory build over the last 40 years.

In the Annual Energy Outlook 2020: 1st Coal Working Group, the amount of coal electricity generation is expected to remain relatively flat and is sensitive to the projection natural gas prices. Through 2025, coal generation is expected to slightly decline because of coal plant retirements, natural gas competition, and increasing competition with renewable generation., but then stabilizes somewhat afterwards aided by federal rule compliance and higher natural gas prices. Because of the projected decrease in demand for coal generation, as well as a lower demand for U.S. exports, and a number of coal mines that have been idled for extended period as a result of COVID-19 the EIA forecasts coal production will by decline 22 percent in 2020. Over the long term, the coal producers in the Appalachia and Western regions are projected to decline in production, while the Interior region will grow slightly. Average delivered coal prices to the electric power sector indicate limited competitive opportunity for coal. Coal prices are forecast to increase from an average of $2.00/MMBtu in 2020 to $2.04/MMBtu in 2020.

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

OUC Response:
The Stanton Energy Center and the Indian River site are both reliably served by the Florida Gas Transmission Company (FGT). These two sites are currently the only sites in which OUC owns natural gas fired generating units. OUC is confident in FGT's ability to continue to reliably serve both the Stanton Energy Center and Indian River units into the future. Historically, FGT has demonstrated an ability to provide reliable service and continues to make improvements to its existing natural gas transportation system as well as expand its natural gas transportation system to accommodate the growing need for natural gas across the State of Florida. A recent example is FGT's Phase VIII expansion.

The addition of Stanton Energy Center Unit B (Stanton B) necessitated additional firm natural gas capacity to the Stanton Energy Center. OUC has negotiated a contract with FGT for firm natural gas transportation to serve the needs of Stanton B. OUC's Commission has approved the contract and the contract was signed in January 2010.

In addition, in 2017 OUC entered into a five-year contract for the storage of natural gas to manage price volatility and provide backup fuel for emergency situations. The contract provides up to 30,000 MMBtu/day to help ensure power reliability. It is OUC's intent to keep a natural gas storage position in place through the planning period.

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.

OUC Response:
The effect of natural gas pipeline expansion projects outside of the State of Florida on OUC cannot be directly quantified, but the following discussion is being presented for informational purposes. See the following table, which is based on information from FERC's website (http://www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp.) and reflects major pipeline projects that received approval in 2019.

2019							
Docket No.	Company/Project	Capacity (MMcf/d)	Miles of Pipe	Compression (HP)	States	Filing Date	Issued Date
CP18-46	Adelphia Gateway, LLC, Adelphia Gateway Pipeline	850.00	4.75	11,250	PA, DE	01/12/18	12/20/19
CP18-548	Eastern Shore Natural Gas Company, Del-Mar Energy Pathway Project	14.30	19.47	0	MD, DE	09/14/18	12/19/19
CP19-07	Tennessee Gas Pipeline Company, L.L.C., 261 Upgrade Projects	72.40	2.10	4,418	CT, MA	10/19/18	12/19/19
P19-26	Dominion Energy Transmission, Inc., West Loop Project	150.00	5.10	0	PA, OH	12/18/18	12/19/19
CP16-454, CP16-455, PF15-20	Rio Bravo Pipeline Company, LLC, Rio Grande LNG, LLC, Rio Bravo Pipeline Company LLC, Rio Grande LNG Terminal and Pipeline System Project, Rio Grande LNG Terminal, Rio Bravo Pipeline Project	4,500.00	139.40	600,000	TX	05/05/16	11/22/19
CP18-332	El Paso Natural Gas Company, L.L.C., South Mainline Expansion Project	321.00	17.00	26,440	AZ, NM, TX	04/26/18	11/22/19
CP18-186	Transcontinental Gas Pipe Line Company, Southeastern Trail Project	296.38	7.72	60,720	VA, SC, GA, LA	04/11/18	10/17/19
CP18-512, CP18-513, PF15-26	Cheniere Corpus Christi Pipeline, L.P., Corpus Christi Liquefaction, LLC, Corpus Christi Liquefaction Stage III, L, Stage 3 LNG Facilities, Stage 3 Pipeline	1,500.00	21.00	44,000	TX	06/28/18	10/10/19

2019							
Docket No.	Company/Project	Capacity (MMcf/d)	Miles of Pipe	Compression (HP)	States	Filing Date	Issued Date
CP18-538	Sendero Carlsbad Gateway, LLC, Limited Jurisdiction Certificate	400.00	23.28	0	NM, TX	08/09/18	10/10/19
CP19-52-000	Natural Gas Pipeline Company of America, Lockridge Extension Project	500.00	16.84	0	TX	01/18/19	10/17/19
CP17-66-000, CP17-67-000, PF15-27-000	Venture Global Plaquemines LNG, LLC, Venture Global Gator Express, LLC, Gator Express, Plaquemines LNG	3,940.00	26.80	0	LA	07/02/15	09/30/19
CP18-487-000	Natural Gas Pipeline Company of America, SPL Project	400.00	0.00	22,490	LA	05/18/18	09/30/19
CP18-102-000, CP18-103-000	Cheyenne Connector, LLC, Rockies Express Pipeline LLC, Cheyenne Connector Pipeline Project	600.00	70.00	32,100	CO	03/05/18	09/20/19
CP18-525-000	Gulf South Pipeline Company, LP, Willis Lateral Project	200.00	19	15,876	TX	07/13/18	07/18/19
CP19-32-000	Portland Natural Gas Transmission System, Westbrook XPress	42482	0	0	NH, ME	12/21/18	07/02/19
CP17-101-000, PF16-05	Transcontinental Gas Pipe Line Company; Northeast Supply Enhancement Project	400.00	37.09	53,902	NJ, NY, PA	3/27/2017	05/03/19
CP17-20, CP17-21, CP17-21-001, CP18-07, PF15-18, PF15-19, PF17-05	PORT ARTHUR LNG, LLC, Port Arthur Pipeline, LLC, PALNG Common Facilities Company, LLC; Liquefaction Project, Pipeline Facilities Project, Louisiana Connector Project	4,000.00	169.85	154,952	LA, TX	11/29/16	04/18/19
CP17-117-000, CP17-118-000, PF16-006-000	Driftwood LNG LLC, Driftwood LNG Pipeline LLC, Driftwood Pipeline LLC, Driftwood LNG, Driftwood Pipeline	4,000.00	96.00	296,500	LA	03/31/17	04/18/19
CP18-89-000	Empire Pipeline, Inc., Empire North Project	205.00	0.00	53,068	PA, NY	02/16/18	03/07/19
CP18-534, PF18-1-000	Northern Natural Gas Company, Northern Lights 2019 and Rochester Expansion Projects	138.50	31.30	42,953	MN	07/27/18	02/22/19
CP18-506-000	Portland Natural Gas Transmission System, Portland XPress Project Phase III	46.71	0.00	6,300	MA, ME	06/19/18	02/21/19

2019							
Docket No.	Company/Project	Capacity (MMcf/d)	Miles of Pipe	Compression (HP)	States	Filing Date	Issued Date
CP18-534-000, PF18-01-000	Northern Natural Gas Company, Northern Lights 2019 and Rochester Expansion Projects	138.50	31.30	42,953	MN	07/27/18	02/21/19
CP15-550-000, CP15-551-000, CP15-551-001, PF15-2-000	Venture Global Calcasieu Pass, LLC, TransCameron Pipeline, LLC, Venture Global Calcasieu Pass LNG Terminal and Pipeline Project, TransCameron Pipeline Project, Venture Global Calcasieu Pass LNG Terminal	2,125.00	42.70	0	LA	06/28/16	02/21/19

Specific to Florida, Sabal Trail Transmission LLC (Sabal Trail) originates in Alabama and is routed through Georgia with termination in Florida. Sabal Trail's Phase I facilities were placed into service in July 2017. The Sabal Trail pipeline consists of approximately 517 miles of natural gas pipeline, with a capacity of 830,000 Dth/day. More information on Sabal Trail can be found at http://www.sabaltrailtransmission.com/

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.

OUC Response:
According to the 2020 AEO, natural gas production is expected to increase, in order to support higher levels of domestic consumption and natural gas exports. The increased production leads to higher natural gas prices over the projected period, as production expands into less productive and more expensive areas, thereby putting upward pressure on costs. According to the EIA, the U.S. is expected to continue being a net exporter of natural gas as pipeline exports to Mexico and LNG exports to the global market increase. The increasing natural gas exports to Mexico are a result of more pipeline infrastructure to and within Mexico to support the increased demand for natural gas from the electric power sector. Through 2030, export growth to Mexico slows as Mexican domestic natural gas production increases, and LNG exports grow rapidly as Asian demand grows and U.S. prices remain competitive. LNG exports then begin to remain level as U.S. sourced LNG become less competitive in global energy markets. U.S. imports of natural gas from Canada continue to generally decline from the historically high levels, while U.S. exports to Canada continue to increase because of Eastern Canada's proximity to abundant U.S. natural gas resources in the Marcellus and Utica plays. However, this export growth slows in the mid-2020s as Canada begins transitioning to more renewables in its generation mix, thereby leading to the decline in the demand for natural gas.

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

OUC Response:
In 2017 OUC entered into a five-year contract for the storage of natural gas to manage price volatility and provide backup fuel for emergency situations. The contract provides up to 30,000 MMBtu/day to help ensure power reliability. It is OUC's intent to keep a natural gas storage position in place through the planning period.

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.

OUC Response:
OUC has established the ability to deliver coal to Stanton through the Port of Tampa, as it has included a freight rate and service capability to deliver coal from Tampa to the plant in its rail contract with CSX Transportation. OUC does not currently expect to use this method of delivery because of the relative economics of delivering coal by region of origin and freight mode.

Coal imports are forecasted to decrease through 2021 due to better market opportunities for global seaborne coals in other markets thereby reducing demand on an already limited supply of coal vessels and in return deflating waterborne rates.
Barges and ships are losing ground to rail deliveries as railroads see increased productivity gains via increased hauling capacity, larger train consists and a more efficient coal nomination process which in turn results in faster cycle times of equipment.

OUC's source of coal supply is the Western Kentucky/Illinois Basin (IB) supply region, but OUC can also receive coal from the Central Appalachia supply region, and the Northern Appalachia supply region delivered by rail to Stanton. In the last quarter of 2014, OUC transitioned to 100 percent IB coal to take advantage of its economic benefits over Central Appalachia coal. OUC continues to monitor the markets in each supply region to ensure OUC is receiving the most economical and reliable coal supply. It is OUC's expectation that world markets for coal and vessel freight will fluctuate over the 10-year plan and that OUC will evaluate these markets and purchase coal by water through Tampa when economical.

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.

OUC Response:
OUC has considered modifications to the coal handling facilities at the Stanton Energy Center, including modifications to the layout to allow for isolated storage of different coal types. However, OUC has not made any decisions in this regard.

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.

OUC Response:
As a minority owner of the St. Lucie Unit No. 2 nuclear unit, OUC is not directly involved in plans for the storage and disposal of spent nuclear fuel.

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

OUC Response:
Given the magnitude of nuclear generation in OUC's portfolio and the historically stable price of nuclear generation, OUC does not anticipate that uranium production trends will affect OUC during the current planning period.

Existing Generating Unit Operating Performance

Plant Name	Unit No.	Planned Outage Factor (POF) Historical	Planned Outage Factor (POF) Projected	Forced Outage Factor (FOF) Historical	Forced Outage Factor (FOF) Projected	Equivalent Availability Factor (EAF) Historical	Equivalent Availability Factor (EAF) Projected	Average Net Operating Heat Rate (ANOHR) Historical	Average Net Operating Heat Rate (ANOHR) Projected
Stanton Energy Center	1	8.90%	6.60%	2.40%	3.00%	85.98%	90.60%	10,797	10,700
Stanton Energy Center	2	10.23%	6.60%	1.44%	3.00%	85.08%	90.60%	10,189	10,200
Stanton Energy Center	B	10.48%	3.80%	2.04%	3.00%	85.7%	93.30%	7,469	7,246
Indian River	A	3.82%	1.90%	1.17%	1.00%	95.11%	97.10%	N/A	13,735
Indian River	B	4.65%	1.90%	0.23%	1.00%	95.08%	97.10%	N/A	13,995
Indian River	C	3.86%	1.90%	0.01%	2.00%	96.11%	96.10%	N/A	17,158
Indian River	D	3.01%	1.90%	1.47%	2.00%	93.47%	96.10%	N/A	16,527

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

Nominal, Firm Purchases

Year	Firm Purchases $/MWh	Escalation %
HISTORY:		
2017		
2018		
2019		
FORECAST:		
2020	OUC does not have any firm purchases for which it can report data. Cost of Stanton Energy Center A PPA is considered confidential.	
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		

Financial Assumptions
Base Case

AFUDC RATE		6.5	%
CAPITALIZATION RATIOS:			
	DEBT	N/A	%
	PREFERRED	N/A	%
	EQUITY	N/A	%
RATE OF RETURN			
	DEBT	N/A	%
	PREFERRED	N/A	%
	EQUITY	N/A	%
INCOME TAX RATE:			
	STATE	N/A	%
	FEDERAL	N/A	%
	EFFECTIVE	N/A	%
OTHER TAX RATE:		N/A	%
DISCOUNT RATE:		6.5	%
TAX			
DEPRECIATION RATE:		N/A	%

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
2020	2.0	2.0	2.0	2.0
2021	2.0	2.0	2.0	2.0
2022	2.0	2.0	2.0	2.0
2023	2.0	2.0	2.0	2.0
2024	2.0	2.0	2.0	2.0
2025	2.0	2.0	2.0	2.0
2026	2.0	2.0	2.0	2.0
2027	2.0	2.0	2.0	2.0
2028	2.0	2.0	2.0	2.0
2029	2.0	2.0	2.0	2.0

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						
2021						
2022						
2023						
2024	OUC does not develop projections for either Annual Isolated or Annual Assisted Loss of Load Probability nor Expected Unserved Energy.					
2025						
2026						
2027						
2028						
2029						

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

This question is not applicable as OUC is not an Investor-Owned Utility

Date	Hourly System Load (MW)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/1/2019																								
1/2/2019																								
1/3/2019																								
1/4/2019																								
1/5/2019																								
1/6/2019																								
1/7/2019																								
1/8/2019																								
1/9/2019																								
1/10/2019																								
1/11/2019																								
1/12/2019																								
1/13/2019																								
1/14/2019																								
1/15/2019																								
1/16/2019																								
1/17/2019																								
1/18/2019																								
1/19/2019																								
1/20/2019																								
1/21/2019																								
1/22/2019																								
1/23/2019																								
1/24/2019																								
1/25/2019																								
1/26/2019																								
1/27/2019																								
1/28/2019																								
1/29/2019																								
1/30/2019																								
1/31/2019																								
2/1/2019																								
2/2/2019																								
2/3/2019																								
2/4/2019																								
2/5/2019																								
2/6/2019																								
2/7/2019																								
2/8/2019																								
2/9/2019																								
2/10/2019																								
2/11/2019																								
2/12/2019																								
2/13/2019																								
2/14/2019																								
2/15/2019																								
2/16/2019																								
2/17/2019																								
2/18/2019																								
2/19/2019																								
2/20/2019																								
2/21/2019																								
2/22/2019																								
2/23/2019																								
2/24/2019																								
2/25/2019																								
2/26/2019																								
2/27/2019																								
2/28/2019																								
Leave Row Blank																								
3/1/2019																								
3/2/2019																								
3/3/2019																								
3/4/2019																								
3/5/2019																								
3/6/2019																								

3/7/2019																									
3/8/2019																									
3/9/2019																									
3/10/2019																									
3/11/2019																									
3/12/2019																									
3/13/2019																									
3/14/2019																									
3/15/2019																									
3/16/2019																									
3/17/2019																									
3/18/2019																									
3/19/2019																									
3/20/2019																									
3/21/2019																									
3/22/2019																									
3/23/2019																									
3/24/2019																									
3/25/2019																									
3/26/2019																									
3/27/2019																									
3/28/2019																									
3/29/2019																									
3/30/2019																									
3/31/2019																									
4/1/2019																									
4/2/2019																									
4/3/2019																									
4/4/2019																									
4/5/2019																									
4/6/2019																									
4/7/2019																									
4/8/2019																									
4/9/2019																									
4/10/2019																									
4/11/2019																									
4/12/2019																									
4/13/2019																									
4/14/2019																									
4/15/2019																									
4/16/2019																									
4/17/2019																									
4/18/2019																									
4/19/2019																									
4/20/2019																									
4/21/2019																									
4/22/2019																									
4/23/2019																									
4/24/2019																									
4/25/2019																									
4/26/2019																									
4/27/2019																									
4/28/2019																									
4/29/2019																									
4/30/2019																									
5/1/2019																									
5/2/2019																									
5/3/2019																									
5/4/2019																									
5/5/2019																									
5/6/2019																									
5/7/2019																									
5/8/2019																									
5/9/2019																									
5/10/2019																									
5/11/2019																									
5/12/2019																									
5/13/2019																									
5/14/2019																									
5/15/2019																									
5/16/2019																									
5/17/2019																									
5/18/2019																									

5/19/2019																									
5/20/2019																									
5/21/2019																									
5/22/2019																									
5/23/2019																									
5/24/2019																									
5/25/2019																									
5/26/2019																									
5/27/2019																									
5/28/2019																									
5/29/2019																									
5/30/2019																									
5/31/2019																									
6/1/2019																									
6/2/2019																									
6/3/2019																									
6/4/2019																									
6/5/2019																									
6/6/2019																									
6/7/2019																									
6/8/2019																									
6/9/2019																									
6/10/2019																									
6/11/2019																									
6/12/2019																									
6/13/2019																									
6/14/2019																									
6/15/2019																									
6/16/2019																									
6/17/2019																									
6/18/2019																									
6/19/2019																									
6/20/2019																									
6/21/2019																									
6/22/2019																									
6/23/2019																									
6/24/2019																									
6/25/2019																									
6/26/2019																									
6/27/2019																									
6/28/2019																									
6/29/2019																									
6/30/2019																									
7/1/2019																									
7/2/2019																									
7/3/2019																									
7/4/2019																									
7/5/2019																									
7/6/2019																									
7/7/2019																									
7/8/2019																									
7/9/2019																									
7/10/2019																									
7/11/2019																									
7/12/2019																									
7/13/2019																									
7/14/2019																									
7/15/2019																									
7/16/2019																									
7/17/2019																									
7/18/2019																									
7/19/2019																									
7/20/2019																									
7/21/2019																									
7/22/2019																									
7/23/2019																									
7/24/2019																									
7/25/2019																									
7/26/2019																									
7/27/2019																									
7/28/2019																									
7/29/2019																									
7/30/2019																									

7/31/2019																									
8/1/2019																									
8/2/2019																									
8/3/2019																									
8/4/2019																									
8/5/2019																									
8/6/2019																									
8/7/2019																									
8/8/2019																									
8/9/2019																									
8/10/2019																									
8/11/2019																									
8/12/2019																									
8/13/2019																									
8/14/2019																									
8/15/2019																									
8/16/2019																									
8/17/2019																									
8/18/2019																									
8/19/2019																									
8/20/2019																									
8/21/2019																									
8/22/2019																									
8/23/2019																									
8/24/2019																									
8/25/2019																									
8/26/2019																									
8/27/2019																									
8/28/2019																									
8/29/2019																									
8/30/2019																									
8/31/2019																									
9/1/2019																									
9/2/2019																									
9/3/2019																									
9/4/2019																									
9/5/2019																									
9/6/2019																									
9/7/2019																									
9/8/2019																									
9/9/2019																									
9/10/2019																									
9/11/2019																									
9/12/2019																									
9/13/2019																									
9/14/2019																									
9/15/2019																									
9/16/2019																									
9/17/2019																									
9/18/2019																									
9/19/2019																									
9/20/2019																									
9/21/2019																									
9/22/2019																									
9/23/2019																									
9/24/2019																									
9/25/2019																									
9/26/2019																									
9/27/2019																									
9/28/2019																									
9/29/2019																									
9/30/2019																									
10/1/2019																									
10/2/2019																									
10/3/2019																									
10/4/2019																									
10/5/2019																									
10/6/2019																									
10/7/2019																									
10/8/2019																									
10/9/2019																									
10/10/2019																									
10/11/2019																									

10/12/2019																									
10/13/2019																									
10/14/2019																									
10/15/2019																									
10/16/2019																									
10/17/2019																									
10/18/2019																									
10/19/2019																									
10/20/2019																									
10/21/2019																									
10/22/2019																									
10/23/2019																									
10/24/2019																									
10/25/2019																									
10/26/2019																									
10/27/2019																									
10/28/2019																									
10/29/2019																									
10/30/2019																									
10/31/2019																									
11/1/2019																									
11/2/2019																									
11/3/2019																									
11/4/2019																									
11/5/2019																									
11/6/2019																									
11/7/2019																									
11/8/2019																									
11/9/2019																									
11/10/2019																									
11/11/2019																									
11/12/2019																									
11/13/2019																									
11/14/2019																									
11/15/2019																									
11/16/2019																									
11/17/2019																									
11/18/2019																									
11/19/2019																									
11/20/2019																									
11/21/2019																									
11/22/2019																									
11/23/2019																									
11/24/2019																									
11/25/2019																									
11/26/2019																									
11/27/2019																									
11/28/2019																									
11/29/2019																									
11/30/2019																									
12/1/2019																									
12/2/2019																									
12/3/2019																									
12/4/2019																									
12/5/2019																									
12/6/2019																									
12/7/2019																									
12/8/2019																									
12/9/2019																									
12/10/2019																									
12/11/2019																									
12/12/2019																									
12/13/2019																									
12/14/2019																									
12/15/2019																									
12/16/2019																									
12/17/2019																									
12/18/2019																									
12/19/2019																									
12/20/2019																									
12/21/2019																									
12/22/2019																									
12/23/2019																									

12/24/2019																									
12/25/2019																									
12/26/2019																									
12/27/2019																									
12/28/2019																									
12/29/2019																									
12/30/2019																									
12/31/2019																									

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	1,004	0	1,004	1/31/2019	800	49
	2	1,032	0	1,032	2/22/2019	1700	85
	3	1,053	0	1,053	3/11/2019	1700	85
	4	1,120	0	1,120	4/18/2019	1800	89
	5	1,337	0	1,337	5/28/2019	1700	97
	6	1,430	0	1,430	6/25/2019	1800	97
	7	1,370	0	1,370	7/2/2019	1700	93
	8	1,327	0	1,327	8/26/2019	1600	94
	9	1,346	0	1,346	9/9/2019	1700	93
	10	1,213	0	1,213	10/29/2019	1700	88
	11	1,090	0	1,090	11/7/2019	1600	84
	12	948	0	948	12/10/2019	1600	84
2018	1	1,239	0	1,239	1/18/2018	800	28
	2	1,052	0	1,052	2/26/2018	1600	87
	3	1,023	0	1,023	3/1/2018	1600	84
	4	1,088	0	1,088	4/9/2018	1900	85
	5	1,172	0	1,172	5/24/2018	1700	86
	6	1,314	0	1,314	6/20/2018	1700	94
	7	1,313	0	1,313	7/17/2018	1600	91
	8	1,322	0	1,322	8/8/2018	1700	95
	9	1,341	0	1,341	9/18/2018	1700	94
	10	1,248	0	1,248	10/16/2018	1700	91
	11	1,112	0	1,112	11/9/2018	1600	87
	12	987	0	987	12/3/2018	1500	85
2017	1	979	0	979	1/9/2017	800	43
	2	951	0	951	2/28/2017	1700	84
	3	1,028	0	1,028	3/30/2017	1800	87
	4	1,216	0	1,216	4/28/2017	1700	93
	5	1,272	0	1,272	5/30/2017	1700	93
	6	1,282	0	1,282	6/22/2017	1700	93
	7	1,349	0	1,349	7/7/2017	1800	97
	8	1,343	0	1,343	8/8/2017	1700	97
	9	1,281	0	1,281	9/1/2017	1700	93
	10	1,222	0	1,222	10/9/2017	1700	89
	11	992	0	992	11/7/2017	1700	82
	12	952	0	952	12/11/2017	800	39
Notes							
(Include Notes Here)							

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

Given the changing technology and uncertainty of electric vehicle deployment, the number of additional charging stations that will be required by the public is considered speculative and no long-term projection has been made at this time. Since no long-term projection has been made, the requested table has been left blank.

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						
2021						
2022						
2023						
2024						
2025						
2026						
2027						
2028						
2029						
Notes						
(Include Notes Here)						

TYSP Year	2020	This question is not applicable as OUC is not an Investor-Owned Utility
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									
(Include Notes Here)									

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

This question is not applicable as OUC is not an Investor-Owned Utility

[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										
(Include Notes Here)										

TYSP Year	2020	This question is not applicable as OUC is not an Investor-Owned Utility
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							
(Include Notes Here)							

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	(%)
Indian River	A	Brevard	GT	NG	06	89	15.6 [1]	18.1 [1]	15.6 [1]	18.1 [1]	15.6 [1]	18.1 [1]	See Note (8)
Indian River	B	Brevard	GT	NG	07	89	15.6 [1]	18.1 [1]	15.6 [1]	18.1 [1]	15.6 [1]	18.1 [1]	See Note (8)
Indian River	C	Brevard	GT	NG	08	92	83.0 [2]	88.5 [2]	83.0 [2]	88.5 [2]	83.0 [2]	88.5 [2]	See Note (8)
Indian River	D	Brevard	GT	NG	10	92	83.0 [2]	88.5 [2]	83.0 [2]	88.5 [2]	83.0 [2]	88.5 [2]	See Note (8)
Stanton Energy Center	1	Orange	ST	BIT	07	87	320.7 [3]	320.7 [3]	294.3 [3]	294.3 [3]	294.3 [3]	294.3 [3]	See Note (8)
Stanton Energy Center	2	Orange	ST	BIT	06	96	344.0 [4]	344.0 [4]	333.8 [4]	333.8 [4]	333.8 [4]	333.8 [4]	See Note (8)
Stanton Energy Center	A	Orange	CC	NG	10	01	197.7 [5]	202.6 [5]	184.2 [5]	188.5 [5]	184.2 [5]	188.5 [5]	See Note (8)
Stanton Energy Center	B	Orange	CC	NG	02	10	295.0	310.0	292.0	307.0	292.0	307.0	See Note (8)
McIntosh	3	Polk	ST	BIT	09	82	146.0 [6]	146.0 [6]	133.0 [6]	136.0 [6]	133.0 [6]	136.0 [6]	See Note (8)
St. Lucie [7]	2	St. Lucie	NP	UR	06	83	63.0	63.0	60.0	62.0	60.0	62.0	See Note (8)

Notes

(1) Reflects and OUC ownership share of 48.8 percent.
(2) Reflects an OUC ownership sahre of 79.0 percent.
(3) Reflects an OUC ownership share of 68.6 percent.
(4) Reflects an OUC ownership share of 71.7 percent and St. Cloud entitlement of 3.4 percent.
(5) Reflects an OUC ownership share of 28.0 percent.
(6) Reflects an OUC ownership share of 40.0 percent.
(7) OUC owns approximately 6.1 percent of St. Lucie Unit No. 2. Reliability exchange divides 50 percent power from Unit No. 1 and 50 percent power from Unit No. 2.
(8) OUC considers capacity factor information to be confidential and therefore is not reporting it.
(9) Indian River Steam Units 1 through 3 are in Extended Cold Shutdown and therefore not included in the requested table.

TYSP Year 2020
Staff's Data Request # 1
Question No. 30

OUC does not have any traditional generation resources planned for in-service within the current planning period.

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													
(Include Notes Here)													

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	(%)
Co-Fired Stanton Energy Center Landfill Gas	1/2	Orange	ST	LFG	04	98	See Note (1)	See Note (1)	See Note (1)	See Note (1)	See Note (1)	See Note (1)	See Note (2)
OUC Distributed Solar (<250 kW)	6	Orange	Solar	SUN	Various	Various	0.105	0.105	0.105	0.105	0.105	0.105	See Note (2)

Notes

(1). LFG is co-fired in Stanton Energy Center Units 1 and 2 and therefore not treated as incremental capacity.

(2). Capacity factor is not reported as LFG is co-fired in Stanton Energy Center Units 1 and 2 and OUC considers capacity factors to be confidential information.

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

OUC does not currently have plans for new utility-owned renewable resources planned for in-service within the current planning period.

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													
(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
NextEra Energy	Stanton Energy Center	A	Orange	CC	NG	See Note (1)	See Note (1)	342	350	342	350	10/03	12/31
Notes													
(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.													

TYSP Year	2020	OUC does not currently have plans for any purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered during the current planning period.
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													
(Include Notes Here)													

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
Duke Energy	Stanton Solar Farm	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	5.1	5.1	0	0	11/11	11/31
GES Port Charlotte	Port Charlotte	N/A	Charlotte	Landfill Gas	LFG	See Note (1)	See Note (1)	2.56	2.56	2.56	2.56	11/11	11/31
ESA Renewables	Fleet Solar Project	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	0.335	0.335	0	0	02/13	02/38
ESA Renewables	Gardenia Solar Project	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	0.268	0.268	0	0	10/13	10/38
Waste Management	Monarch	N/A	Broward	Landfill Gas	LFG	See Note (1)	See Note (1)	6	6	6	6	03/16	12/26
ACE	Ksionek Stanton Solar	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	9	9	0	0	09/17	08/37
CBI	CBI	N/A	Osceola	Landfill Gas	LFG	See Note (1)	See Note (1)	9	9	9	9	03/17	02/37
Notes													
(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.													

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
NextEra	Harmony	N/A	Osceola	Solar	SUN	See Note (1)	See Note (1)	34	34	0	0	07/20	12/40
NextEra	Taylor Creek	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	74	74	0	0	07/20	12/40
Invenergy	TBD	N/A	Osceola	Solar	SUN	See Note (1)	See Note (1)	74	74	0	0	12/22	11/41
Invenergy	TBD	N/A	Osceola	Solar	SUN	See Note (1)	See Note (1)	74	74	0	0	12/23	11/42

Notes

(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.

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
City of Bartow	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	40	40	1/18	12//20
City of Lake Worth Beach	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	50	25	1/19	12/25
City of Winter Park	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	17	17	1/26	12/26
Florida Power & Light	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	100	70	1/18	12/20
Notes													
(1) Gross Capacity and Net Capacity are not reported as OUC treats each of thse sales as firm contracted capacity.													

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
City of Mt. Dora	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	23	17	01/21	12/27
City of Chattahoochee	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	8	6	01/21	12/27
Notes													
(Include Notes Here)													

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											
Utility - Non-Firm											
Utility - Co-Firing	38	51	54	53	55	56	57	58	59	61	62
Purchase - Firm											
Purchase - Non-Firm	107	215	528	534	716	954	1,009	1,019	1,030	1,025	1,024
Purchase - Co-Firing											
Customer - Owned	24	34	43	52	62	71	80	89	98	108	117
Total	169	300	625	639	833	1,081	1,146	1,166	1,187	1,194	1,203
Notes											
(Include Notes Here)											

TYSP Year 2020 This question is not applicable as OUC is not an Investor-Owned Utility.
Staff's Data Request # 1
Question No. 43

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

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 (%)
Gardenia Flow Battery	Y	05/20	0.12	0.48	75%

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 (%)
St. Cloud East Substation #29	Y	06/21	4	8	89%

Notes

(Include Notes Here)

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

This question is not applicable as OUC is not an Investor-Owned Utility.

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				
(Include Notes Here)				

TYSP Year 2020 OUC does not have any planned traditional units with
Staff's Data Request # 1 an in-service date within the current planning period
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				
(Include Notes Here)				

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

OUC considers the requested information to be confidential and therefore has not provided it in response to this request.

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Notes														
(Include Notes Here)														

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

OUC does not have any steam units that are potential candidates for repowering to operation as combined cycle units.

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Notes					
(Include Notes Here)					

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

OUC is evaluating whether any steam units are potential candidates for fuel switching.

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Notes					
(Include Notes Here)					

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

OUC does not have any proposed transmission lines in the planning period that require certification under the Transmission Line Siting Act.

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
Notes					
(Include Notes Here)					

TYSP Year 2020
Staff's Data Request # 1
Question No. 66 e

This question is not applicable, as OUC does not currently have any firm plans related to the addition of new generating units that would be affected by this standard.

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				
(Include Notes Here)				

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
Stanton 1	ST	BIT	294.3 (1)	N/A	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	Emissions monitoring (Hg CEMS), emissions control retrofits (FLGR installation)	N/A	N/A	Landfill Cell 2 (30 Acres) construction started on July 15, 2019 with completion scheduled for November 12, 2020. CCR Rule requires the base of the liner to be located on average 5 feet above the upper limit of the uppermost aquifer and increased the thickness of clay composite liner from 6 to 12 inches. CCR required the closure of Landfill Cell 1 to have a minimum of 40 mil HDPE liner on the top & slope of the landfill.	N/A
Stanton 2	ST	BIT	333.8 (2)	N/A	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	Emissions monitoring (Hg CEMS), emissions control retrofits (FLGR installation) under consideration	N/A	N/A	Landfill Cell 2 (30 Acres) construction started on July 15, 2019 with completion scheduled for November 12, 2020. CCR Rule requires the base of the liner to be located on average 5 feet above the upper limit of the uppermost aquifer and increased the thickness of clay composite liner from 6 to 12 inches. CCR required the closure of Landfill Cell 1 to have a minimum of 40 mil HDPE liner on the top & slope of the landfill.	N/A

Notes

(1). Represents OUC's 68.6% ownership share.

(2). Represents OUC's 71.7% ownership share as well as City of St. Cloud's 3.4% entitlement.

TYSP Year 2020 The costs shown in the table correspond to the years in which the expenditures occurred.
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
Stanton 1	ST	BIT	294.3 (1)	N/A	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	$1M	N/A – Note that OUC has $11 million in stranded costs associated with SCR, which has been postponed following vacature of CSAPR.	N/A	$6.5M +$2.1M. Landfill Cell 2 incurred $10M additional cost of fill dirt due to CCR Rule requiring the base of the liner to be located on average 5 feet above the upper limit of the uppermost aquifer and $3.5M for the additional 6 inches of clay.Landfill Cell 1 Closure incurred an additional cost of $6M due to design, material & construction cost.	N/A
Stanton 2	ST	BIT	333.8 (2)	N/A	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	$1M	N/A	N/A	$6.5M +$2.1M. Landfill Cell 2 incurred $10M additional cost of fill dirt due to CCR Rule requiring the base of the liner to be located on average 5 feet above the upper limit of the uppermost aquifer and $3.5M for the additional 6 inches of clay.Landfill Cell 1 Closure incurred an additional cost of $6M due to design, material & construction cost.	N/A

Notes

(1). Represents OUC's 68.6% ownership share.

(2). Represents OUC's 71.7% ownership share as well as City of St. Cloud's 3.4% entitlement.

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
Stanton 1	ST	BIT	294.3 (1)	No Outage Req'd	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd
Stanton 2	ST	BIT	333.8 (2)	No Outage Req'd	Evaluation of the emission limitations achievable by the application of BSER is currently on-going. Until these evaluations are completed the impact of the ACE Rule cannot be fully determined.	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd

Notes

(1). Represents OUC's 68.6% ownership share.

(2). Represents OUC's 71.7% ownership share as well as City of St. Cloud's 3.4% entitlement.

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

Fuel prices are not included in the table below as OUC considers fuel prices to be proprietary and confidential.

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2010	385	See Note (1)	4,500	See Note (1)	1,924	See Note (1)	0	See Note (1)	7	See Note (1)
	2011	385		3,850		2,682		0		0	
	2012	417		2,745		3,781		0		1	
	2013	569		3,030		3,376		0		0	
	2014	472		3,534		3,405		0		1	
	2015	461		3,157		3,475		0		0	
	2016	464		3,464		3,903		0		0	
	2017	467		3,955		3,326		0		0	
	2018	470		4,204		3,422		0		0	
	2019	449		3,614		3554		0		0	
Projected	2020	591		3,324		3,631		0		0	
	2021	569		3,487		3,101		0		0	
	2022	596		3,369		3,386		0		0	
	2023	578		3,418		3,343		0		0	
	2024	588		3,670		2,960		0		0	
	2025	566		3,353		3,341		0		0	
	2026	566		3,353		3,153		0		0	
	2027	586		3,273		3,220		0		0	
	2028	566		2,901		3,611		0		0	
	2029	554		3,250		3,405		0		0	

Notes

(1). Fuel prices are not included in the table below as OUC considers fuel prices to be proprietary and confidential.