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May 17, 2021

Donald Phillips  
Damian Kistner  
Florida Public Service Commission  
Division of Engineering  
2540 Shumard Oak Blvd  
Tallahassee, Florida 32399-0850

Subject: Responses to Staff's Data Request #1 - 2021 Orlando Utilities Commission Ten-Year Site Plan

Dear Mr. Phillips and Mr. Kistner,

Enclosed please find the Orlando Utilities Commission (OUC) responses to Staff's Data Request #1 for OUC's 2021 Ten-Year Site Plan (TYSP).

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

Respectfully submitted,

/s/ 

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1  
**General Items**

1. **Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the period 2021-2030 (current planning period) in PDF format.**

OUC Response:

The requested information was provided to the Florida Public Service Commission on April 2, 2021.

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 2, 2021.

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<sub>2</sub> 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<sub>2</sub> compliance costs are first assumed to have a non-zero value.**
  - b. **[Investor-Owned Utilities Only] Please explain if the exclusion of CO<sub>2</sub> 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<sub>2</sub> compliance costs.**

OUC Response:

CO<sub>2</sub> compliance costs have not been included in the resource planning process used to generate the resource plan presented in OUC's 2021 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, 2000 through December 31, 2019.
- 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 2021 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 2021 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 2011, 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 2011 through 2020, inclusive of St. Cloud, OUC's average annual residential, commercial, and total customer growth rates were 2.3%, 1.7%, and 2.2%, 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 1.9% on average over the 2021 to 2030 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 2021 to 2030 period.

For additional details on the forecast number of households and population by county see Table 4-1 in OUC's 2021 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 2021 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 965 kWh/month in 2011 to approximately 912 kWh/month in 2020, an average annual decline of 0.6%. The decline in average use per residential customer has tapered dramatically since the beginning of the 10-year historic period due to the increased saturation of more efficient HVAC equipment and other electrical devices as well as customer conservation efforts. Forecast residential average usage is expected to remain relatively flat as increased electric vehicle charging mitigates further saturation of more efficient electrical equipment and conservation efforts. Commercial sales have also shown a slight, long-term declining use per customer trend that has been greatly exacerbated by the impacts of COVID-19 in 2020. The average OUC weather normalized usage per commercial customer declined approximately 1.0% annually from 2011 through 2020. Commercial average usage is expected to nearly recover to pre-COVID levels by 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 1.4% from 2011 to 2020, where 2020 was impacted from COVID-19, and is projected to grow at an average annual rate of 2.1% from 2021 to 2030. The main drivers for a higher growth rate than in the past are due to the recovery from COVID-19 effects as well as 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 an offset in Net Energy for Load growth from 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 2021 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 reductions of load due to Self Service. Historic Self Service has not been significant. Projected Self Service for the forecast period was provided by the National Renewable Energy Lab as part of a recent study performed on OUC's service territory. According to the study, Self Service generation is projected to grow at an average annual rate of 1.0% from 2021 to 2030.

- 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, some decline in Total Demand is due to wholesale agreements 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 combined OUC & St. Cloud net energy for load (NEL) at approximately the same rate. For 2021 – 2030, NEL is expected to average 2.1% growth annually while the system peak is expected to average 2.3% growth in the summer period and 1.9% growth in the winter period.

- 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:

The effects of COVID-19 have caused a large decrease in what would have been much higher peak demand for 2020 had COVID-19 not occurred, given the near-record heat that was experienced within the year. Due to the weather effects that were greatly favorable to higher load, the overall negative effects on load from COVID-19 were largely mitigated. OUC is not aware of any other anomalies within the historical 10-year period.

- 16. [Investor-Owned Utilities Only] If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account**



**for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:**

- a. **Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.**
- b. **Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.**
- c. **Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.**
- d. **Schedule 3.1 - History and Forecast of Summer Peak Demand.**
- e. **Schedule 3.2 - History and Forecast of Winter Peak Demand.**
- f. **Schedule 3.3 - History and Forecast of Annual Net Energy for Load.**
- g. **Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.**

OUC Response:

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

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

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 2021 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.

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

OUC Response:

OUC's forecast includes the projected 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, provided by Siemens, 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 PEV sales as a percentage to total LDV sales. Additionally, Siemens provided the survival 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.

- 19. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing estimates of the requested information within the Company's service territory for the current planning period. Direct current fast charger (DCFC) PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.**

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.

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

**21. 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.

**22. Please describe any instances since January 1 of the year prior to the current planning period in which upgrades to the distribution system were made where PEVs were a contributing factor.**

OUC Response:

OUC has had no instances where distribution upgrades were needed in order to accommodate the installation of two public charging stations.

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

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.

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

OUC Response:

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

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

OUC Response:

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

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

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 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**

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

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Utility Existing Traditional"

- 29. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same**

**type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.**

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

OUC Response:

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

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

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Utility Existing Traditional"

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

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

OUC Response:

OUC is planning on installing a 100 kW array of bifacial solar panels on the roof of our Gardenia facility. The project is slated to complete in 2021.

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

OUC Response:

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

- 33. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a traditional generator still in effect by December 31**

**of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.**

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, 2020 is with NextEra Energy (formerly with Southern-Company Florida, LLC) for capacity and energy from Stanton Energy Center Unit A.

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

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

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.

**35. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.**

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PPA Existing Renewable".

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

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

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "PPA Planned Renewable".

Power Purchase Agreements were executed for the Storey Bend and Harmony II projects in January 2021 with planned commercial operation in December 2023. Land options were secured for these projects prior to PPA execution. Due diligence and permitting are underway and are expected to be complete by year end 2021. The interconnection process is underway with the transmission provider and initial study results are expected in late 2021. Construction is tentatively scheduled to begin in early 2023.

As discussed throughout OUC's 2021 Ten-Year Site Plan, OUC anticipates entering into additional solar PPAs (both with and without energy storage); these PPAs are included for informational purposes in the Excel table associated with the response to this question.

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

OUC Response:

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

**38. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each power sale agreement still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered from the Company to a third-party during said year.**

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 2021 TYSP, OUC's power sales agreements in effect on December 31, 2020 consist of agreements with the City of Lake Worth Beach, the City of Winter Park and City of Bartow.

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

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

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 2021 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, the City of Chattahoochee, and Lakeland Electric.

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

OUC Response:

OUC's agreement to sell power to Florida Power & Light expired December 31, 2020 and OUC's agreement to sell power to the City of Bartow expired January 1, 2021.

**41. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing the actual and projected annual energy output of all renewable resources on the Company's system, by source, for the 11-year period beginning one year prior to the current planning period.**

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Annual Renewable Generation".

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

OUC Response:

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

**43. 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.

**44. [Investor-Owned Utilities Only] Please discuss whether the Company has been approached by renewable energy generators during the year prior to the current**



**planning period regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.**

OUC Response:

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

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

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.

**46. 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 large-scale lithium-ion energy storage resources. OUC has observed a slight increase in storage system prices over the past year.

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

OUC Response:

In 2020, OUC installed a small-scale (20kW), commercially-available vanadium flow battery system at a demonstration site. The performance of this system under controlled conditions will help inform OUC's decisions regarding larger-scale systems in the future.

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

OUC Response:

Several aspects of energy storage systems are under consideration (in no particular order): 1) AC- or DC-coupled to renewable energy sources, 2) proximity of AC-coupled systems to renewable energy sources, 3) proximity to heavily-loaded feeders, 4) site/land-use limitations, and 5) potential for value-stacking (e.g. back-up power options).

**49. 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 312 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

**50. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all energy storage technologies that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.**

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Existing Energy 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 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 "Existing Energy Storage".

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

- a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.
- b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the current planning period.
- c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

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 evaluate the costs, benefits, risks and operational limitations of the system

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

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

OUC Response:

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

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

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

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.

**55. Please identify and discuss the Company's role in the research and development of utility power technologies. As part of this response, please describe any plans to implement the results of research and development into the Company's system portfolio and discuss how any anticipated benefits will affect your customers.**

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.

**56. [Investor-Owned Utilities Only] Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the historical annual average as-available energy rate in the Company's service territory for the 10-year period prior to the current planning period. Also, provide the projected annual average as-available energy rate in the**

**Company's service territory for the current planning period. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.**

OUC Response:

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

**57. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all planned traditional units with an in-service date within the current planning period. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.**

OUC Response:

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

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

OUC Response:

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

OUC's planned renewable additions reflected in the 2021 Ten-Year site Plan are anticipated to be via purchase power agreements (PPAs) with other entities that develop and construct the facilities. As such, OUC does not have a timeline for construction, regulatory approval, and final decisions related to the facilities.

**59. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing the actual and projected capacity factors for each existing and planned unit on the Company's system for the 11-year period beginning one year prior to the current planning period.**

OUC Response:

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

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

OUC Response:

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

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

OUC Response:

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

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

OUC Response:

OUC anticipates converting both Stanton Unit 1 and Stanton Unit 2 to no longer operate on coal and instead operate only on natural gas for the first unit no later than 2025 and no later than 2027 for the second unit; OUC is in the process of determining the final timing of the natural gas conversion of each unit. Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Steam Unit Fuel Switching".

- 63. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing a list of all proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. Please also include in the table transmission lines that have already been approved, but are not yet in-service.**

OUC Response:

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

**Environmental**

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

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.

On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.

**65. 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.

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

- a. Mercury and Air Toxics Standards (MATS) Rule.
- b. Cross-State Air Pollution Rule (CSAPR).
- c. Cooling Water Intake Structures (CWIS) Rule.
- d. Coal Combustion Residuals (CCR) Rule.
- e. Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.
- f. Affordable Clean Energy Rule or its replacement.
- g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.

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, on 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.

- 67. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.**

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "EPA Operational Effects".

- 68. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.**

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.

- 69. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.**

OUC Response:

Please see attached "Data Request #1 – Excel Tables\_OUC" (Excel .xlsx file), and refer to the Worksheet titled "EPA Unit Availability".

- 70. If applicable, identify any currently approved costs for environmental compliance investments made by your Company, including but not limited to renewable energy or energy efficiency measures, which would mitigate the need for future investments to**

**comply with recently finalized or proposed EPA regulations. Briefly describe the nature of these investments and identify which rule(s) they are intended to address.**

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**

**71. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the actual annual fuel usage (in GWh) and average fuel price (in nominal \$/MMBTU) for each fuel type utilized by the Company in the 10-year period prior to the current planning period. Also, provide the forecasted annual fuel usage (in GWh) and forecasted annual average fuel price (in nominal \$/MMBTU) for each fuel type forecasted to be used by the Company in the current planning period.**

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 2021 through 2030 reflects dispatch to serve energy required to serve OUC, St. Cloud, City of Lake Worth Beach, City of Winter Park, City of Mt. Dora, City of Chattahoochee, and Lakeland Electric load obligations as discussed in Section 2 of OUC's 2021 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.

**72. 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 2021 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 2021 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.

- 73. Please identify and discuss expected industry trends and factors for each fuel type listed below that may affect the Company during the current planning period.**
- a. Coal**
  - 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 2022 through 2031 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 2021 (2021 AEO): 2021 Summer Fuels Outlook, Short-Term Energy Outlook (STEO), and Annual Energy Outlook 2021 1st Coal Working Group references, with comparisons to the Annual Energy Outlook 2020 (2020 AEO) Reference case. The overall effect of the trends relative to OUC cannot be determined, as the projections included in 2021 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, energy markets remain to subject to heightened levels of uncertainty as responses to COVID-19 continue to evolve.

According to the 2021 STEO, the residential natural gas prices average \$10.83 per thousand cubic feet in 2020, which is approximately four percent higher than in 2020. In the 2021 AEO, the price of natural gas is expected to increase by more than one-half in 2021, bouncing back from the historically low-levels that resulted from COVID-19, as the natural gas share of the generation mix returns to pre-COVID-19 levels but, will remain at or lower than \$3.50/MMBtu over the projected period. According to the 2021 AEO, natural gas production is expected to increase, returning to pre-pandemic levels in 2023. After 2023, natural gas production continues to grow and remain at historically high levels through 2050 in order to support higher levels of domestic consumption and natural gas exports. While all sectors, except for the residential sector, are projected to have increased natural gas consumption over the projected period, the industrial sector is expected to be responsible for the most growth in consumption. The EIA estimates that the End-of-March natural gas working inventories are 2% lower than the five-year (2016-2020) average, as the 2020-21 winter experienced high withdrawals largely because of a cold February and low natural gas production. The EIA expects U.S. LNG exports to more than double between 2020 and 2029 to meet increased international demand for natural gas. LNG exports then begin to remain level as U.S. sourced LNG become less competitive in global energy markets.

In the 2021 STEO, the EIA estimates that U.S. dry natural gas production averaged 91.4 Bcf per day in 2020. The average dry natural gas production is forecasted to be at a similar level in 2021 and increase to 93.4 Bcf per day in 2022. The increase in dry natural gas production and continued growth in LNG exports will contribute to the average Henry Hub spot price rising from \$3.04/MMBtu in 2021 to \$3.11/MMBtu in 2022.

According to the 2021 STEO, the global oil market continues to remain subject to heightened levels of uncertainty as responses to COVID-19 continue to evolve. Reduced economic activity related to the pandemic has caused changes in energy demand and supply during the past year and will continue to affect these patterns in the future. Crude oil spot prices are forecast to average \$62 per barrel in 2021 and rise to \$60 per barrel in 2022 as global stock draws begin to moderate, easing upward pressure on prices. For comparison, crude oil spot prices averaged \$42 per barrel in 2020, which was 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<sup>1</sup>.

In the Annual Energy Outlook 2021: 1<sup>st</sup> Coal Working Group, the amount of coal electricity generation is expected to remain relatively flat long-term and is sensitive to the projection natural gas prices. Through 2025, coal generating capacity is expected to decline due to coal plant retirements, natural gas competition, and increasing competition with renewable generation. Coal production is projected to decrease through 2025 as a result of retiring coal-fired generating capacity, but then stabilizes somewhat afterwards aided by federal rule compliance and higher natural gas prices. 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 and natural gas prices to the electric power sector indicate limited competitive opportunity for coal. Delivered coal prices are forecast to remain level an average of \$1.92/MMBtu in 2021 and 2022.

**74. 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.

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

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<sup>1</sup> 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.

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 (<https://www.ferc.gov/industries-data/natural-gas/approved-major-pipeline-projects-1997-present>.) and reflects major pipeline projects that received approval in 2020.

Docket No.	Company/Project	Capacity (MMcf/d)	Miles of Pipe	Compression (HP)	States	Filing Date	Issued Date
CP20-30-000	Texas Eastern Transmission, LP/Middlesex Extension Project	264.00	1.75		NJ	12/19/19	10/15/20
CP20-436-000	Texas Eastern Transmission, LP/Appalachia to Market Project	18.00	0.80		PA	05/01/20	09/30/20
<a href="#">CP20-16-000</a>	Portland Natural Gas Transmission System/Westbrook XPress Project Phases II and III	131.20		15,900	ME	11/18/19	6/18/20
<a href="#">CP20-8-000</a>	ANR Pipeline Company/Grand Chenier XPress Project	400.00		50,840	LA	10/28/19	6/18/20
<a href="#">CP19-517-000</a>	Gulf South Pipeline Company, LLC/Lamar County Expansion Project	200.00	3.40	5,000	MS	9/30/19	6/18/20
<a href="#">CP19-512-000</a>	Texas Eastern Transmission, LP/Cameron Extension Project	750.00	.20	30,000	LA	9/26/19	6/18/20
CP19-495-000, PF18-6-000	Summit Permian Transmission, LLC, Double E Pipeline, LLC/Double E Pipeline Project	1,350.00	132.90		NM, TX	10/17/18	10/15/20
<a href="#">CP19-491-000</a> , <a href="#">CP19-494-000</a> , <a href="#">PF17-10-000</a> , <a href="#">PF19-1-000</a>	National Fuel Gas Supply Corporation, Transcontinental Gas Pipe Line Company/FM100 Project, Leidy South Project	912.40	43.11	162,057	PA	7/18/19	7/16/20
CP19-488-000	Columbia Gulf Transmission, LLC/Louisiana XPress Project	493.00		140,820	LA	07/16/19	09/17/20
CP19-484-000	Kinder Morgan Louisiana Pipeline LLC/Acadiana Project	894.00		95,700	LA	06/28/19	09/17/20
<a href="#">CP19-14-000</a> , <a href="#">PF18-4-000</a>	*Mountain Valley Pipeline, LLC/Southgate Project	375.00	73.00	28,915	NC, VA	11/06/18	6/18/20

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/>

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

OUC Response:

According to the EIA, in 2020, low heating demand combined with COVID-19 related demand reductions led to an oversupply of natural gas, resulting in the lowest natural gas prices since the 1990s. These historically low natural gas prices in turn led to natural gas-fired generation displacing coal-fired generation during 2020. The price of natural gas is expected to increase by more than one-half in 2021 as the natural gas share of the generation mix returns to pre-COVID-19 levels but, will remain at or lower than \$3.50/MMBtu over the projected period. According to the 2021 AEO, natural gas production is expected to increase, returning to pre-pandemic levels in 2023. After 2023, natural gas production continues to grow and remain at historically high levels through 2050 in order to support higher levels of domestic consumption and natural gas exports. While all sectors, with the exception of the residential sector, are projected to have increased natural gas consumption over the projected period, the industrial sector is expected to be responsible for the most growth in consumption. The EIA expects U.S. LNG exports to more than double between 2020 and 2029 to meet increased international demand for natural gas. LNG exports then begin to remain level as U.S. sourced LNG become less competitive in global energy markets.

**77. 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.

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

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.

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

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.

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

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.

**81. 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.

**Weatherization**

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

OUC Response:

OUC's generation fleet has been very reliable for past cold weather events. OUC will conduct a severe cold weather event tabletop exercise in late Fall 2021 to assess potential reliability vulnerabilities. Any vulnerabilities will be identified and prioritized for mitigation.

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

OUC Response:

OUC's generation fleet has been very reliable for past cold weather events. OUC will conduct a severe cold weather event tabletop exercise in late Fall 2021 to assess potential reliability vulnerabilities. Any vulnerabilities will be identified and prioritized for mitigation.

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

**Existing Generating Unit Operating Performance**

Plant Name	Unit No.	Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
		Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Stanton Energy Center	1	13.29%	6.60%	2.39%	3.00%	81.17%	90.60%	10,732	10,700
Stanton Energy Center	2	12.16%	6.60%	1.09%	3.00%	83.60%	90.60%	10,324	10,200
Stanton Energy Center	B	9.64%	3.80%	1.76%	3.00%	86.0%	93.30%	7,469	7,246
Indian River	A	3.93%	1.90%	0.05%	1.00%	95.05%	97.10%	N/A	13,735
Indian River	B	4.05%	1.90%	0.13%	1.00%	95.81%	97.10%	N/A	13,995
Indian River	C	3.76%	1.90%	0.00%	2.00%	96.23%	96.10%	N/A	17,158
Indian River	D	3.20%	1.90%	0.68%	2.00%	94.28%	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 %
<b>HISTORY:</b>		
2018		
2019		
2020		
<b>FORECAST:</b>		
2021	OUC does not have	
2022	any firm purchases for	
2023	which it can report	
2024	data. Cost of Stanton	
2025	Energy Center A PPA	
2026	is considered	
2027	confidential.	
2028		
2029		
2030		

**Financial Assumptions**

**Base Case**

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

**Financial Escalation Assumptions**

Year	General	Plant Construction	Fixed O&M	Variable O&M
	Inflation	Cost	Cost	Cost
	%	%	%	%
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
2030	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			Annual Assisted		
	Loss of Load Probability (Days/Yr)	Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2021						
2022						
2023						
2024						
2025	OUC does not develop projections for either Annual Isolated or Annual Assisted Loss of Load Probability nor					
2026	Expected Unserved Energy.					
2027						
2028						
2029						
2030						

TYSP Year            2021  
 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
1/1/2020																								

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Year	Month	Actual Peak Demand	Demand Response Activated	Estimated Peak Demand	Day	Hour	System-Average Temperature
		(MW)	(MW)	(MW)			(Degrees F)
2020	1	1,114	0	1,114	1/22/2020	800	64
	2	1,041	0	1,041	2/13/2020	1700	66
	3	1,138	0	1,138	3/30/2020	1700	74
	4	1,184	0	1,184	4/13/2020	1500	75
	5	1,212	0	1,212	5/21/2020	1700	77
	6	1,357	0	1,357	6/29/2020	1600	81
	7	1,343	0	1,343	7/14/2020	1700	82
	8	1,354	0	1,354	8/28/2020	1700	82
	9	1,354	0	1,354	9/3/2020	1700	81
	10	1,232	0	1,232	10/8/2020	1700	78
	11	991	0	991	11/10/2020	1600	72
	12	926	0	926	12/26/2020	1100	59
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
<b>Notes</b>							
(Include Notes Here)							

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

TYSP Year  
 Staff's Data Request #  
 Question No.

2021 Given the changing technology and uncertainty of electric vehicle  
 1 deployment, the number of additional charging stations that will be  
 19 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 DCFC PEV Charging Stations.	Cumulative Impact of PEVs		
				Summer Demand	Winter Demand	Annual Energy
				(MW)	(MW)	(GWh)
2021						
2022						
2023						
2024						
2025						
2026						
2027						
2028						
2029						
2030						
<b>Notes</b>						
(Include Notes Here)						

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

This question is not applicable as OUC does not currently offer demand response programs to its customers

[Demand Response Source or All Demand Response Sources]									
Year	Beginning Year: Number of Customers	Available Capacity (MW)		New Customers Added	Added Capacity (MW)		Customers Lost	Lost Capacity (MW)	
		Sum	Win		Sum	Win		Sum	Win
2011									
2012									
2013									
2014									
2015									
2016									
2017									
2018									
2019									
2020									
<b>Notes</b>									
(Include Notes Here)									



TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

This question is not applicable as OUC does not currently offer demand response programs to its customers

[Demand Response Source or All Demand Response Sources]							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak?	Number of Customers Activated	Capacity Activated	Activated During Peak?	Number of Customers Activated	Capacity Activated
		(Y/N)		(MW)	(Y/N)		(MW)
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
<b>Notes</b>							
(Include Notes Here)							

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

This question is not applicable as OUC does not currently offer demand response programs to its customers

[Demand Response Source or All Demand Response Sources]										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		MW	Number of Customers	MW	Number of Customers		MW	Number of Customers	MW	Number of Customers
2011										
2012										
2013										
2014										
2015										
2016										
2017										
2018										
2019										
2020										
<b>Notes</b>										
(Include Notes Here)										

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Indian River	A	Brevard	GT	NG	06	89	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	See Note (8)
Indian River	B	Brevard	GT	NG	07	89	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	15.6 <sup>(1)</sup>	18.1 <sup>(1)</sup>	See Note (8)
Indian River	C	Brevard	GT	NG	08	92	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	See Note (8)
Indian River	D	Brevard	GT	NG	10	92	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	83.0 <sup>(2)</sup>	88.5 <sup>(2)</sup>	See Note (8)
Stanton Energy Center	1	Orange	ST	BIT	07	87	320.7 <sup>(3)</sup>	320.7 <sup>(3)</sup>	305.1 <sup>(3)</sup>	305.1 <sup>(3)</sup>	305.1 <sup>(3)</sup>	305.1 <sup>(3)</sup>	See Note (8)
Stanton Energy Center	2	Orange	ST	BIT	06	96	344.0 <sup>(4)</sup>	344.0 <sup>(4)</sup>	339.8 <sup>(4)</sup>	339.8 <sup>(4)</sup>	339.8 <sup>(4)</sup>	339.8 <sup>(4)</sup>	See Note (8)
Stanton Energy Center	A	Orange	CC	NG	10	01	197.7 <sup>(5)</sup>	202.6 <sup>(5)</sup>	184.2 <sup>(5)</sup>	188.5 <sup>(5)</sup>	184.2 <sup>(5)</sup>	188.5 <sup>(5)</sup>	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 <sup>(6)</sup>	146.0 <sup>(6)</sup>	133.0 <sup>(6)</sup>	136.0 <sup>(6)</sup>	133.0 <sup>(6)</sup>	136.0 <sup>(6)</sup>	See Note (8)
St. Lucie <sup>(7)</sup>	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 share 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 Data Request #1 - Excel Tables\_OUC\_05172021

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

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	(%)
<b>Notes</b>													
(Include Notes Here)													

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
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)	7	Orange	Solar	SUN	Various	Various	0.238	0.238	0.238	0.238	0.238	0.238	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 Data Request #1 - Excel Tables\_OUC\_05172021

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

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Gardenia Bi-facial	1	Orange	Solar	Sun	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	N/A
<b>Notes</b>													
(Include Notes Here)													

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

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
NextEra Energy	Stanton Energy Center	A	Orange	CC	NG	See Note (1)	See Note (1)	342	350	342	350	10/03	12/31
<b>Notes</b>													
(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.													

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

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.

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
<b>Notes</b>													
(Include Notes Here)													



TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
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)	4	4	4	4	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
NextEra	Taylor Creek	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	74.5	74.5	0	0	06/20	06/40
NextEra	Harmony	N/A	Osceola	Solar	SUN	See Note (1)	See Note (1)	34	34	0	0	06/20	06/40
<b>Notes</b>													
(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.													

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
NextEra	Storey Bend	N/A	Osceola	Solar	Sun	See Note (1)	See Note (1)	74.5	74.5	0	0	12/23	12/43
NextEra	Harmony II	N/A	Osceola	Solar	Sun	See Note (1)	See Note (1)	74.5	74.5	0	0	12/23	12/43
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	224	224	0	0	06/25	06/45
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	0	0	06/26	06/46
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	0	0	06/27	06/47
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	224	224	0	0	06/28	06/48
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	224	224	0	0	06/29	06/49
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	298	298	0	0	06/30	06/50
TBD	TBD	N/A	TBD	Energy Storage	Other	See Note (1)	See Note (1)	100	100	100	100	06/25	06/45
TBD	TBD	N/A	TBD	Energy Storage	Other	See Note (1)	See Note (1)	50	50	50	50	06/26	06/46
TBD	TBD	N/A	TBD	Energy Storage	Other	See Note (1)	See Note (1)	50	50	50	50	06/28	06/48
TBD	TBD	N/A	TBD	Energy Storage	Other	See Note (1)	See Note (1)	150	150	150	150	06/30	06/50
<b>Notes</b>													
(1) Gross Capacity is not reported as OUC purchases capacity that is considered as net capacity.													

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
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	1/21
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
<b>Notes</b>													
(1) Gross Capacity and Net Capacity are not reported as OUC treats each of these sales as firm contracted capacity.													

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
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
Lakeland Electric	System Sale	N/A	N/A	N/A	N/A	See Note (1)	See Note (1)	See Note (1)	See Note (1)	125 [See Note (2)]	125	04/21	12/23
<b>Notes</b>													
(1) Gross Capacity and Net Capacity are not reported as OUC treats each of these sales as firm contracted capacity.													
(2) Contracted Firm Capacity reduces to 75 MW for the Summer of 2023.													

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Utility - Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Non-Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Co-Firing	47	46	48	54	51	52	53	52	52	52	52
Purchase - Firm	0	0	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	105	493	496	533	957	964	976	983	985	977	975
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	43	56	72	86	102	116	131	146	161	176	191
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Notes</b>											
(Include Notes Here)											

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

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

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

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MWh)	Conversion Efficiency (%)
Gardenia Flow Battery	Y	05/20	0.12	0.48	75%
<b>Notes</b>					
(Include Notes Here)					

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Projected Max Capacity Output (MW)	Projected Max Energy Stored (MHh)	Projected Conversion Efficiency (%)
St. Cloud East Substation #29	Y	06/21	4	8	89%
<b>Notes</b>					
(Include Notes Here)					



TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

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	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
Projected	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
<b>Notes</b>				
(Include Notes Here)				

As-available Energy Rate

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

TYSP Year 2021 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. 57

Generating Unit Name	Summer Capacity (MW)	Certification Dates (if Applicable)		In-Service Date (MM/YY)
		Need Approved (Commission)	PPSA Certified	
<b>Nuclear Unit Additions</b>				
<b>Combustion Turbine Unit Additions</b>				
<b>Combined Cycle Unit Additions</b>				
<b>Steam Turbine Unit Additions</b>				
<b>Notes</b>				
(Include Notes Here)				

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

TYSP Year 2021 OUC considers the requested information to be confidential and therefore has not provided it in response to this request.  
 Staff's Data Request # 1  
 Question No. 59

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)													
				Actual	Projected												
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030			
<b>Notes</b>																	
(Include Notes Here)																	

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

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

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/YYYY)	Potential Conversion	Potential Issues
<b>Notes</b>					
(Include Notes Here)					

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

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYYY)	Potential Conversion	Potential Issues
Stanton Energy Center Unit 1	BIT	311	04/2027	NG	None identified
Stanton Energy Center Unit 2	BIT	350	10/2025	NG	None identified
<b>Notes</b>					
Reflects an OUC ownership share of 68.6 percent of Stanton 1.					
Reflects an OUC ownership share of 71.7 percent and St. Cloud entitlement of 3.4 percent of Stanton 2.					

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TYSP Data Request #1 - Excel Tables\_OUC\_05172021

TYSP Year                    2021 OUC does not have any proposed transmission lines in the planning  
 Staff's Data Request #        1 period that require certification under the Transmission Line Siting Act.  
 Question No.                    63

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

TYSP Data Request #1 - Excel Tables\_OUC\_05172021

TYSP Year  
 Staff's Data Request #  
 Question No.

This question is not applicable, as OUC does not currently have any  
 2021 firm plans related to the addition of new generating units that would be  
 1 affected by this standard.  
 65 e

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

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

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Stanton 1	ST	BIT	294.3 <sup>(1)</sup>	N/A	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	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 substantial completion on December 31, 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 <sup>(2)</sup>	N/A	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	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 substantial completion on December 31, 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 2021  
 Staff's Data Request # 1  
 Question No. 68

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR \$ millions)						
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Stanton 1	ST	BIT	294.3 <sup>(1)</sup>	N/A	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	\$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 <sup>(2)</sup>	N/A	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	\$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
<b>Notes</b>										
(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 Data Request #1 - Excel Tables\_OUC\_05172021

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

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)							
				ELGS	ACE or replacement	MATS	CSAPR/CAIR	CWIS	CCR		
									Non-Hazardous Waste	Special Waste	
Stanton 1	ST	BIT	294.3 <sup>(1)</sup>	No Outage Req'd	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	No Outage Req'd	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 <sup>(2)</sup>	No Outage Req'd	On 19 January 2021, the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Affordable Clean Energy Rule (ACE Rule). The Biden administration is expected to propose their own greenhouse gas regulations.	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd	No Outage Req'd
<b>Notes</b>											
(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 Data Request #1 - Excel Tables\_OUC\_05172021

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

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	2011	385	See Note (1)	3,850	See Note (1)	2,682	See Note (1)	0	See Note (1)	0	See Note (1)
	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		3,554		0		0	
	2020	500		2,778		4,090		0		0	
Projected	2021	550	See Note (1)	3,520	See Note (1)	2,674	See Note (1)	0	See Note (1)	0	See Note (1)
	2022	560		3,641		2,796		0		0	
	2023	592		3,681		2,840		0		0	
	2024	591		3,986		2,283		0		0	
	2025	571		2,686		3,773		0		0	
	2026	588		2,161		4,144		0		0	
	2027	588		1,863		4,462		0		0	
	2028	563		0		6,332		0		0	
	2029	583		0		6,455		0		0	
	2030	587		0		6,584		0		0	
<b>Notes</b>											
(1). Fuel prices are not included in the table below as OUC considers fuel prices to be proprietary and confidential.											