nFRONT CONSULTING LLC
Power Industry Planners • Analysts • Advisors

May 9, 2023

Greg Davis
Florida Public Service Commission Engineering
Specialist, Division of Engineering
2540 Shumard Oak Blvd Tallahassee, Florida
32399-0850

Subject: Orlando Utilities Commission Responses to Staff's Review of the 2023 Ten-Year Site Plan - Data Request # 1

Dear Mr. Davis

Enclosed please find the Orlando Utilities Commission (OUC) responses to the subject Data Request #1, which are being submitted by nFront on behalf of OUC.

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

Respectfully submitted,

/s/ Bradley Kushner

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General Items

1. **Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the current planning period (2023-2032) in PDF format.**

   OUC Response:
   The requested information was provided to the Florida Public Service Commission on April 3, 2023.

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

   OUC Response:
   The requested information was provided to the Florida Public Service Commission on April 3, 2023.

3. **Please refer to the Excel Tables File (Financial Assumptions, Financial Escalation). Complete the tables by providing information on the financial assumptions and financial escalation assumptions used in developing the Company's TYSP. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.**

   OUC Response:
   Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file) and refer to the worksheets titled "Financial Assumptions" and "Financial Escalation".

Load & Demand Forecasting

Historic Load & Demand

4. **[Investor-Owned Utilities Only] Please refer to the Excel Tables File (Hourly System Load). Complete the table by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank.**
   a. **Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time (March 13, 2022, and November 6, 2022).**

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

5. **Please refer to the Excel Tables File (Historic Peak Demand). Complete the table by providing information on the monthly peak demand experienced during the three-year period prior to the current planning period, including the actual peak demand experienced, the amount of demand response activated during the peak, and the estimated total peak if demand response had not been activated. Please also provide the day, hour, and system-average temperature at the time of each monthly peak.**

   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.

Forecasted Load & Demand

6. Please identify the weather station(s) used for calculation of the system-wide temperature for the Company's service territory. If more than one weather station is utilized, please describe how a system-wide average is calculated.

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.

7. Please explain, to the extent not addressed in the Company's current planning period TYSP, how the reported forecasts of the number of customers, demand, and total retail energy sales were developed. In your response, please include the following information:

- **Methodology.**
- **Assumptions.**
- **Data sources.**
- **Third-party consultant(s) involved.**
- **Anticipated forecast accuracy.**
- **Any difference/improvement(s) made compared with those forecasts used in the Company's most recent prior TYSP.**

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 based on the continued trend of decreasing heating degree days and increasing cooling degree days since 1980.
- 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 adoption curves were provided by the National Renewable Energy Laboratory

A detailed explanation of OUC's forecasting methodology is included in Section 4 of OUC's 2023 Ten-Year Site Plan

8. Please identify all closed and open Florida Public Service Commission (FPSC) dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's current planning period TYSP.

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 2023 TYSP.

9. Please explain if your Company evaluates the accuracy of its forecasts of customer growth and annual retail energy sales presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

b. If your response is negative, please explain.

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.

10. Please explain if your Company evaluates the accuracy of its forecasts of Summer/Winter Peak Energy Demand presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

b. If your response is negative, please explain why.

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.

11. Please explain any historic and forecasted trends in each of the following:

a. Growth of customers, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

OUC Response:
From 2013 through 2022, inclusive of St. Cloud, OUC's average annual residential, commercial/industrial, and total customer growth rates were 2.7%, 1.8%, and 2.5%, 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 2.0% on average over the 2023 to 2032 period.

Commercial/industrial 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 1.4% on average over the 2023 to 2032 period.

For additional details on the forecast number of households and population by county see Table 4-1 in OUC's 2023 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 2023 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 984 kWh/month in 2013 to approximately 911 kWh/month in 2022, an average annual decline of 0.9%. 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 0.5% annually from 2013 through 2022. Commercial average usage is expected to recover to pre-COVID.

c. Total Sales (GWh) to Ultimate Customers, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

OUC Response:
Net Energy for Load had an average annual growth of 1.1% from 2013 to 2022, where 2020 was impacted from COVID-19, and is projected to grow at an average annual rate of 0.6% from 2023 to 2032. 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 2023 10-Year Site Plan.

d. By customer type (residential, commercial, industrial) provide a detailed discussion of how the Company's demand-side management program(s) and conservation/energy-efficiency program(s) impact the observed trends in gigawatt hour sales (Schedule 3.3).

OUC Response:
Please refer to OUC's 2023 10-Year Site Plan and OUC's 2023 Annual Conservation Report (for Demand-Side Management and Conservation Programs Offered in Calendar Year 2022), each of which have been filed with the Public Service Commission, for discussion of OUC's demand-side management, conservation, and energy efficiency programs and initiatives.

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

a. Demand Reduction due to the Company's demand-side management program(s) and Self Service, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

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. Projected Self Service was forecasted using adoption curves provided by the National Renewable Energy Lab as part of a recent study performed on OUC's service territory. According to this forecast, Self Service generation is projected to grow at an average annual rate of 22.0% from 2023 to 2032.

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. 12d, 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 2023 – 2032, NEL is expected to average 1.5% growth annually while the system peak is expected to average 1.9% growth in the summer period and 2.2% growth in the winter period.

13. [FEECA Utilities Only] In the 2019 goal-setting proceeding, the Commission chose to continue the goals established by its 2014 goal-setting decision for the period 2020-2024. Beyond 2024 through the end of the forecasted period, how did the Company project what demand savings amounts are reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2, and 3.3? Please explain what assumptions are incorporated in those amounts, and why.

OUC Response:
The projections of demand savings reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2, and 3.3 are based on OUC achieving the PSC-approved goals established in the 2019 goal-setting proceeding.

14. On August 16, 2022, the Inflation Reduction Act of 2022 ("IRA") became law. Regarding the provisions of the IRA and related funding, please explain the following:
a. Whether the conservation related provisions are reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2, and 3.3 through the forecast (planning) period, and if so, how. If the provisions of the Act are not reflected in such forecasts, please explain why.

OUC Response:
OUC has not explicitly accounted for the provisions of the IRA in its estimates of DSM and conservation. As more information about the relevant provisions of the IRA and potential impact on energy requirements associated with DSM and conservation becomes available, OUC will incorporate such information into its DSM and conservation estimates.

b. Whether the electrification related provisions are reflected on the demand and energy load-related portions of Schedules 3.1, 3.2, and 3.3 through the forecast (planning) period, and if so, how. If the provisions of the IRA are not reflected in such forecasts, please explain why.

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

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 following, respectively:
a. Summer Peak Demand.
b. Winter Peak Demand.
c. Annual Retail Energy Sales.

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

16. Please provide responses to the following questions regarding the weather factors considered in the Company's retail energy sales and peak demand forecasts:
a. Please identify, with corresponding explanations, all the weather-related input variables that were used in the respective Retail Energy Sales, Winter Peak Demand, and Summer Peak Demand models.

OUC Response:
Degree days are used for the sales forecast and are the difference between 65 F° and the average daily temperature (high plus low divided by 2). For the peak forecast variations are used where 55 F° and 80 F° instead of 65 F° are used for the winter and summer calculations, respectively.

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

OUC Response:
Historical temperature data is from the National Weather Service's Orlando International Airport ("MCO") reporting station.

c. Please explain in detail the process/procedure/method, if any, the Company utilized to convert the raw weather data into the values of the model input variables.

OUC Response:
Converted raw weather data to degree days as described above in the response to number 16a.

d. Please specify with corresponding explanations:
i. How many years' historical weather data was used in developing each retail energy sales and peak demand model.

OUC Response:
The regression models used data starting in 2011 in order to forecast future energy sales and peak demands.

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

OUC Response:
Same as the response to 14(d)i.

e. Please explain how the projected values of the input weather variables (that were used to forecast the future sales or demand outputs for each planning years 2023 – 2032) were derived/obtained for the respective retail sales and peak demand models.

OUC Response:
The linear trends of annual heating and cooling degree days for the 43-year period (1980-2022) were extended through 2032 and used in the sales forecast models to represent normal weather. For the peak demand forecast the average heating and cooling degree days for the 20-year period (2003 to 2022) were used to represent normal weather on the peak day.

17. [Investor-Owned Utilities Only] If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:

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

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

18. Please provide responses to the following questions regarding the possible impacts of COVID-19 Pandemic (Pandemic) on the utility load forecast:

a. Please briefly summarize the impacts due to the Pandemic, if any, to the accuracy of the Company's respective forecast of annual retail energy sales and peak demands for 2021 and 2022.

OUC Response:
The Pandemic impacted both retail energy sales and peak demands in 2020. Commercial sales were pretty severely impacted but residential saw little or no impact. There seems to be no or very minimal impact in 2021 and 2022 to both commercial and residential.

b. Have any of your 2023 TYSP retail energy sales and peak demand forecasts incorporated the potential impacts of the Pandemic? Please explain your response.

OUC Response:
No, OUC is not forecasting any potential impacts from the Pandemic on sales at this time.

19. Please address the following questions regarding the impact of all customer-owned/leased renewable generation (solar and otherwise) and/or energy storage devices on the Utility's forecasts.

a. Please explain in detail how the Utility's load forecast accounts for the impact of customer's renewables and/or storage.

OUC Response:
The forecast provided by OUC includes assumptions for customer-sited rooftop solar photovoltaic installations. These assumptions capture historical and projected reductions of load. Projected installations were forecasted using adoption curves provided by the National Renewable Energy Lab as part of a recent study performed on OUC's service territory. According to this forecast, solar rooftop generation is projected to grow at an average annual rate of 22.0% from 2023 to 2032.

b. Please provide the annual impact, if any, of customer's renewables and/or storage on the Utility's retail demand and energy forecasts, by class and in total, for 2023 through 2032.

OUC Response:
The table below contains the forecast annual impact of customer-owned/leased renewable generation (solar and otherwise) on OUC's retail demand and energy forecast.

	Sales Impact (GWh)					System Coincident Hourly Peak Demand & NEL Impact		
	OUC		St. Cloud					
Calendar Year	Residential	General Service	Residential	General Service	Total	Summer (MW)	Winter (MW)	NEL (GWh)
2023	(58)	(13)	(56)	(0)	(127)	(29)	0	(136)
2024	(81)	(15)	(78)	(0)	(174)	(26)	0	(186)
2025	(109)	(18)	(106)	(0)	(233)	(35)	0	(249)
2026	(144)	(20)	(140)	(0)	(304)	(46)	0	(325)
2027	(181)	(24)	(176)	(0)	(382)	(57)	0	(409)
2028	(223)	(29)	(217)	(0)	(469)	(70)	0	(501)
2029	(264)	(33)	(257)	(0)	(554)	(39)	0	(593)
2030	(305)	(37)	(296)	(0)	(639)	(45)	0	(683)
2031	(338)	(41)	(329)	(0)	(708)	(50)	0	(758)
2032	(364)	(43)	(354)	(0)	(762)	(54)	0	(816)

c. If the Utility maintains a forecast for the planning horizon (2023-2032) of the number of customers with renewables and/or storage, by customer class, please provide.

OUC Response:
OUC does not maintain a forecast of the number of customers with customer-owned/leased renewable generation.

Plug-in Electric Vehicles (PEVs)

20. 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 2023 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.

a. Has the Company also included the impact of demand response and time of use rates for the PEV loads? If so, please provide the impact of these measures. If not, please explain why not.

OUC Response:
OUC has not included the impacts of demand response and time of use rates for the PEV loads.

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

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

OUC Response:
There have been no changes or modifications to what OUC reported previously.

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

OUC Response:
There have been no changes or modifications to what OUC reported previously.

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

OUC Response:
There have been no changes or modifications to what OUC reported previously.

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

OUC Response:
There have been no changes or modifications to what OUC reported previously.

e. Any instances since January 1 of the year prior to the current planning period in which upgrades to the distribution system were made where PEVs were a contributing factor.

OUC Response:
There have been no changes or modifications to what OUC reported previously.

22. Please refer to the Excel Tables File (Electric Vehicle Charging). Complete the table by providing estimates of the requested information within the Company's service territory for the current planning period. Direct current fast charger (DCFC) PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

OUC Response:
OUC has supported the installation of more than160 public charging stations and has installed multiple 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.

a. Please describe all significant technological, market, regulatory, or other events or announcements since the filing of the Company's 2022 TYSP which have impacted the metrics reported
b. Please explain if and how the tax incentives and grants for transportation electrification associated with the IRA, adopted in August 2022, has impacted the Company's PEV and PEV charging station adoption/installation, as well as the PEV energy/demand forecast(s). If the provisions of the IRA are not reflected in such forecasts, please explain why.

23. 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?

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

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

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

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

25. Please describe if and how Section 339.287, Florida Statutes, (Electric Vehicle Charging Stations; Infrastructure Plan Development) has impacted the Company's projection of PEV growth and related demand and energy growth.

OUC Response:
While OUC believes that Section 339.287, Florida Statutes, has a benefit to PEV adoption in the State of Florida, OUC has not quantified the impact of how it may affect PEV growth and related demand and energy growth. has been able to move forward with a much stronger high speed charging plan.

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

OUC Response:
OUC is not currently experiencing enough PEV load to materially impact actual peak demand. A pilot with the local transit authority has provide key insights to future impacts of fleet EV adoption and has provided data that is being used to forecast future demand trends.

27. If applicable, please describe any key findings and metrics of the Company's PEV pilot program(s) which reveal the PEV impact to the demand and energy requirements of the Company.

OUC Response:
OUC's pilot with the local transit authority point to significant increases to local infrastructure and overall future demand due to low load factors. The transit authority currently has 8 buses and has aggressive adoption plans for EVs and this adoption will require upgrades to infrastructure. The transit authority has a narrow window to fully charge their fleet and will create a significant peak on their feeder in the next year or two. If other fleets in OUC's territory follow the same adoption with limited charging windows, OUC will need to develop mechanisms to flatten the demand of these events or pass through the expense of upgrades required to serve.

Demand Response

28. [FEECA Utilities Only] Please refer to the Excel Tables File (DR Participation). Complete the table by providing for each source of demand response annual customer participation information for 10 years prior to the current planning period. Please also provide a summary of all sources of demand response using the table.

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

29. [FEECA Utilities Only] Please refer to the Excel Tables File (DR Annual Use). Complete the table by providing for each source of demand response annual usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

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

30. [FEECA Utilities Only] Please refer to the Excel Tables File (DR Peak Activation). Complete the table by providing for each source of demand response annual seasonal peak activation information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

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

31. Please refer to the Excel Tables File (LOLP). Complete the table by providing the loss of load probability, reserve margin, and expected unserved energy for each year of the planning period.

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

Generation & Transmission

Utility-Owned Generation

32. Please refer to the Excel Tables File (Unit Performance). Complete the table by providing information on each utility-owned generating resources' outage factors, availability factors, and average net operating heat rate (if applicable). For historical averages, use the past three years and for projected factors, use an average of the next ten-year period.

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

33. Please refer to the Excel Tables File (Utility Existing Traditional). Complete the table by providing information on each utility-owned traditional generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

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

34. Please refer to the Excel Tables File (Utility Planned Traditional). Complete the table by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

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. The Osceola Generating Station units, recently acquired by OUC, are reflected in the response to No. 33 above.

35. Please refer to the Excel Tables File (Utility Existing Renewable). Complete the table by providing information on each utility-owned renewable generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

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

36. Please refer to the Excel Tables File (Utility Planned Renewable). Complete the table by providing information on each utility-owned renewable generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

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

OUC Response:
OUC does not have any utility-owned renewable generation resource planned for in-service within the 2023 through 2032 planning period.

37. 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.

38. [Investor-Owned Utilities Only] Please refer to the Excel Tables File (As-Available Energy Rate). Complete the table by providing, on a system-wide basis, the historical annual average as-available energy rate in the Company's service territory for the 10-year period prior to the current planning period. Also, provide the projected annual average as-available energy rate in the Company's service territory for the current planning period. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.

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

39. Please refer to the Excel Tables File (Planned PPSA Units). Complete the table by providing information on all planned traditional units with an in-service date within the current planning period. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.

OUC Response:
OUC does not have any planned traditional units with an in-service date within the current planning period. The Osceola Generating Station units, recently acquired by OUC, are reflected in the response to No. 33 above.

40. 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 2023 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.

41. Please refer to the Excel Tables File (Capacity Factors). Complete the table by providing the actual and projected capacity factors for each existing and planned unit on the Company's system for the 11-year period beginning one year prior to the current planning period.

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

42. [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.

43. Please refer to the Excel Tables File (Steam Unit CC Conversion). Complete the table by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.

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

44. Please refer to the Excel Tables File (Steam Unit Fuel Switching). Complete the table by providing information on all of the Company's steam units that are potential candidates for fuel-switching.

OUC Response:
OUC anticipates converting Stanton Unit 2 to no longer operate on coal and instead operate only on natural gas during the 2027 timeframe; OUC is in the process of determining the final timing of the natural gas conversion of the unit. Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Steam Unit Fuel Switching".

45. Please refer to the Excel Tables File (Transmission Lines). Complete the table by providing a list of all proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. Please also include in the table transmission lines that have already been approved, but are not yet in-service.

OUC Response:
OUC does not have any proposed transmission lines in the planning period that require certification under the Transmission Line Siting Act. OUC does have a single transmission line (St. Cloud East – Magnolia Ranch) that is certified under the Transmission Line Siting Act and is under construction.

Purchases and Sales

46. Please refer to the Excel Tables File (Firm Purchases). Complete the table by providing information on the Utility's firm capacity and energy purchases.

OUC Response:
OUC does not have any firm capacity and energy purchases for which it can report data.

47. Please refer to the Excel Tables File (PPA Existing Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

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, 2022 is with NextEra Energy (formerly with Southern-Company Florida, LLC) for capacity and energy from Stanton Energy Center Unit A.

48. Please refer to the Excel Tables File (PPA Planned Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered to the Company during the current planning period.
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.

49. Please refer to the Excel Tables File (PPA Existing Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

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

50. Please refer to the Excel Tables File (PPA Planned Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator pursuant to which energy will begin to be delivered to the Company during the current planning period.
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 2024. 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 2022. The interconnection process is underway with the transmission provider and initial study results are expected in late 2022. Construction is tentatively scheduled to begin in 2023.

As discussed throughout OUC's 2023 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.

51. 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:
OUC has not had any renewable purchased power agreements were cancelled, delayed, or reduced in scope in the past year.

52. Please refer to the Excel Tables File (PSA Existing). Complete the table by providing information on each power sale agreement still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered from the Company to a third-party during said year.

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 2022 TYSP, OUC's power sales agreements in effect on December 31, 2021 consist of agreements with the City of Lake Worth Beach, the City of Winter Park, Lakeland Electric, the City of Mt. Dora, and the City of Chattahoochee.

53. Please refer to the Excel Tables File (PSA Planned). Complete the table by providing information on each power sale agreement pursuant to which energy will begin to be delivered from the Company to a third-party during the current planning period.

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

OUC Response:
OUC does not have any planned power sale agreements pursuant to which energy will begin to be delivered from OUC to a third-party during the current planning period.

54. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified. What was the primary reason for the change? What, if any, were the secondary reasons?

OUC Response:
OUC did not have any long-term power sale agreements within the past year that were cancelled, expired, or modified.

Renewable Generation

55. Please refer to the Excel Tables File (Annual Renewable Generation). Complete the table by providing the actual and projected annual energy output of all renewable resources on the Company's system, by source, for the 11-year period beginning one year prior to the current planning period.

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

56. 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.

57. [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.

58. 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.

59. 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:
OUC's Community Solar program allows residential and commercial customers to obtain a selected percentage (in increments of 10%) of their monthly electric consumption from OUC's Kenneth P. Ksionek Community Solar Farm at the Stanton Energy Center. OUC does not have any additional programs in development.

Energy Storage

60. Briefly discuss any progress in the development and commercialization of non-lithium-ion based 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. In 2022, OUC installed a flywheel storage solution and has started to evaluate long duration thermal storage systems. In 2023, OUC plans to start the installation of a Hydrogen demonstration project that will evaluated hydrogen as a storage medium.

61. If applicable, please describe the strategy of how the Company charges and discharges its energy storage facilities. As part of the response discuss if any recent legislation, including the IRA has changed how the Company dispatches its energy storage facilities.

OUC Response:
Currently OUC dispatches storage as pilot programs to evaluate the function and financial considerations of PV Smoothing, Back-up Power, Volt-Var Support and Peak Shifting/Shaving. These pilot programs will inform the economy and operational ability of these technologies and develop their dispatch algorithms. Currently the IRA has not impacted these approaches.

62. 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). OUC is actively dispatching pilots to evaluate each of theses and understand their full cost/benefit. This will inform the creation of an adoption roadmap that will begin in OUC's fiscal year 2024.

63. Please explain whether customers have expressed interest in energy storage technologies. If so, describe the type of customer (residential, commercial industrial) and how have their interests been addressed.

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 418 customer interconnected battery storage systems.

64. Please refer to the Excel Tables File (Existing Energy Storage). Complete the table by providing information on all energy storage technologies that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Existing Energy Storage". The information in this worksheet reflects energy storage technologies owned by OUC.

65. Please refer to the Excel Tables File (Planned Energy Storage). Complete the table by providing information on all energy storage technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

OUC Response:
Please see attached "Data Request #1 – Excel Tables_OUC" (Excel .xlsx file), and refer to the Worksheet titled "Planned Energy Storage". The information in this worksheet reflects energy storage technologies to be owned by OUC.

66. 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 2023. Once this pilot is in-service, OUC will evaluate the costs, benefits, risks and operational limitations of the system. OUC is also considering customer sited solar projects to evaluate distributed energy resource management system (DERMS) capabilities.

67. 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.

Other

68. Please identify and discuss the Company's role in the research and development of utility power technologies, including, but not limited to research programs that are funded through the Energy Conservation Cost Recovery Clause. As part of this response, please describe any plans to implement the results of research and development into the Company's system portfolio and discuss how any anticipated benefits will affect your customers.

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. Distributed Energy Resources are being evaluated, and both storage and controllable loads are being considered for the grid impact in providing more resiliency and firm capacity. These efforts are also considering the economics and ability to incentivize customers to aid in this effort.

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

The ECCR is not applicable, as OUC is a municipal utility.

Environmental

69. Please explain if the Company assumes carbon dioxide (CO_2) compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative, answer the following questions:

a. Please identify the year during the current planning period in which CO2 compliance costs are first assumed to have a non-zero value.

b. [Investor-Owned Utilities Only] Please explain if the exclusion of CO2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.

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

OUC Response:
CO_2 compliance costs have not been included in the resource planning process used to generate the resource plan presented in OUC's 2023 TYSP.

70. 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.

71. 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? Refer to the Excel Tables File (Emissions Cost). Complete the table 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.

72. 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 "b" through "e" and "g" listed above.

On April 24, 2023 the EPA published the proposal for the "National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units Review of the Residual Risk and Technology Review". The proposal seeks to amend the Mercury and Air Toxics Rule (MATS). The proposal could potentially halve or even further reduce the current filterable particulate matter (PM) limit of 0.03 lb/MMBtu applicable to the Stanton Energy Center's coal units. The proposal would also require the installation of PM CEMS on both units within three years of the publication of the final rule. OUC will continue to monitor rule development to evaluate possible impacts to reliability.

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) and remanded to the EPA for further proceedings consistent with its opinion. The Biden administration is expected to propose their own greenhouse gas regulations.

73. Please refer to the Excel Tables File (EPA Operational Effects). Complete the table by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

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

74. Please refer to the Excel Tables File (EPA Cost Effects). Complete the table by identifying, for each unit impacted by one or more of the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.

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.

75. Please refer to the Excel Tables File (EPA Unit Availability). Complete the table by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

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

76. 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

77. Please refer to the Excel Tables File (Fuel Usage & Price). Complete the table by providing, on a system-wide basis, the actual annual fuel usage (in GWh) and average fuel price (in nominal $/MMBTU) for each fuel type utilized by the Company in the 10-year period prior to the current planning period. Also, provide the forecasted annual fuel usage (in GWh) and forecasted annual average fuel price (in nominal $/MMBTU) for each fuel type forecasted to be used by the Company in the current planning period.

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 2023 through 2032 reflects dispatch to serve energy required to serve OUC, St. Cloud, City of Lake Worth Beach, Winter Park, City of Mt. Dora, City of Chattahoochee, and Lakeland Electric load obligations as discussed in Section 2 of OUC's 2023 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.

78. 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 2023 Ten-Year Site Plan were developed based on a combination of the NYMEX forward curve and projections provided by S&P Global Platts Commodity Insights (Platts). S&P Global Platts purchased the previous firm that OUC used, which was PIRA Energy Group. Among other services, Platts offers insight on a broad range of subjects in the international crude oil, petroleum products, natural gas, electricity, coal, biofuels and emissions markets. Platts 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 2023 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 Platts 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 Platts and EVA differ from those presented in the US Energy Information Administration (EIA) Annual Energy Outlook. The forecasting approaches used by Platts 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 Platts and EVA specifically for OUC are far less broad than the scope of data provided by EIA. The relatively limited scope allows Platts 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 Platts and EVA. Furthermore, OUC's generation planning activities include analysis of fuel price sensitivities, which provide an even more comprehensive analysis of fuel prices.

79. 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 2023 through 2032 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 2023 (2023 AEO), Short-Term Energy Outlook (STEO 2023), and with comparisons to the Annual Energy Outlook 2022 (2022 AEO) Reference case. The overall effect of the trends relative to OUC cannot be determined, as the projections included in 2023 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 Russian-Ukraine conflict continue to evolve.

According to the 2023 STEO the residential natural gas prices averaged $17.36 per thousand cubic feet in 2022, which is approximately 30% higher than the average price of $12.27 per thousand cubic feet in 2021. Henry Hub natural gas spot prices averaged $6.42 per million British thermal units in 2022, and is expected to average less than $3.00/MMBtu for 2023, reflecting over a 50% decrease from last year. The anticipated decrease of natural gas prices in 2023 is related to the expected higher levels of natural gas inventory. Current natural gas inventories are forecasted to end 6% above the five-year average (2018-2022) for the year 2023, These higher inventory levels for the withdrawal season (November-March) are due to the mild winter weather experienced in the first quarter of 2023.

It is expected that natural gas production from 2022 through 2050 will grow by 52% on the Gulf Coast and by 50% in the Southwest, which will increase LNG exports as well. With the projected growth of natural gas production, it is expected that coal production will decline and leading to 17% less US coal-fired generation in the spring of 2023 relative to 2022. In 2021, natural gas exports reached a record high and the 2023 AEO is expecting continued growth in natural gas exports through 2025. According to the EIA, LNG exports are expected to grow by 25% in 2023 and 10% in 2024. Overall, the EIA expects U.S. LNG exports to continue to increase over the next ten years as increasing LNG capacity is expected to meet increased international demand for natural gas. After that point, LNG exports begin to remain level as U.S. sourced LNG become less competitive in global energy markets. According to the STEO dry natural gas production is expected to incur a slight decline in April and May due to pipeline maintenance in West Texas and the Northeast, with averaging 100.9 Bcf/d in 2023.

According to the STEO Crude oil prices are forecasted at $85 per barrel in 2023, up $2/b from last month, March 2023. The higher forecast price reflects a forecast for less global production in 2023. Global liquid fuels consumption is suspected to rise by 1.4 million b/d in 2023 and 1.8 million b/d in 2024. However, recent issues in the banking sector raise the potential that economic and oil demand growth will be lower than the STEO forecast, which has the potential to result in lower oil prices. It is expected that global oil markets will be in relative balance over the 2023 year. The STEO forecasts that the average cost per barrel will be $86 for the rest of 2023, and are expected to average $81/b in 2024. However, these projected prices are fairly uncertainty, as these price decreases are dependent on OPEC increasing its crude oil production.

In the Annual Energy Outlook 2023 and STEO the amount of coal electricity generation is expected to decline in the 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 stabilize somewhat afterwards aided by federal rule compliance and higher natural gas prices. It is expected that coal inventories will increase at power plants within the next year, as it is expected that 11GW of coal-fire capacity will retire and 77 GW of new wind and solar capacity will come online from the end of 2022 to end of 2024. 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. According to the 2023 STEO, delivered coal prices are forecast to average $2.37/MMBtu in 2022, $2.54/MMBtu in 2023, and $2.50/MMBtu in 2024. Regarding coal production, the STEO detailed an increase of 9% between February and March 2023.

80. Please provide a comparison of the Utility's 2022 fuel price forecast and the actual 2022 delivered fuel prices.

OUC Response:
OUC considers fuel prices to be confidential information and, as such, no specific comparison has been developed or provided.

In general, actual 2022 delivered fuel prices were higher than forecast for 2022.

81. Please explain any notable changes in the Utility's forecast of fuel prices used to prepare the Utility's 2023 TYSP compared to the fuel process used to prepare the Utility's 2022 TYSP.

OUC Response:
There were no notable changes to the process from 2022 to 2023.

82. 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 2022 OUC entered into a four and a half year contract for the storage of natural gas to manage price volatility and provide backup fuel for emergency situations. The contract provides up to 40,000 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.

In 2022, OUC secured an additional 29,850 MMBtu/day of winter capacity on FGT to allow more reliability in cold weather events.

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

OUC Response:
The effect of natural gas pipeline expansion projects outside of the State of Florida on OUC cannot be directly quantified, but the following discussion is being presented for informational purposes. See the following table, which is based on information from FERC's website (https://www.ferc.gov/industries-data/natural-gas/approved-major-pipeline-projects-1997-present.) and reflects major pipeline projects that received approval in 2021.

Docket/ Workset Number	Applicant	Project Name	State	Filing Date	Completion Date	Miles of Pipe	Pipeline Capacity (MMcf/Day)	Compression (HP)
CP21-78-000	ANR Pipeline Company	Wisconsin Access Project	WI	3/12/2021	5/19/2022	0	50.71	0
CP21-197-000	Kern River Gas Transmission Company	Delta Lateral Project	UT	4/23/2021	5/19/2022	35.84	140	0
CP20-27-000	North Baja Pipeline, LLC	North Baja XPress Project	AZ, CA	12/16/2019	4/21/2022	0	495	31900
CP20-48-000	Iroquois Gas Transmission System, L.P.	Enhancement by Compression Project	CT, NY	2/3/2020	3/25/2022	0	125	48000
CP20-50-000, CP20-51-000	Tennessee Gas Pipeline Company, L.L.C., Southern Natural Gas Company, L.L.C.	Evangeline Pass Expansion Project	LA, LA, MS	2/7/2020	3/25/2022	13.1, 0	1100, 0	23470
CP20-484-000, CP20-485-000	ANR Pipeline Company Great Lakes Gas, Transmission Limited Par	Alberta XPress Project	LA	6/22/2020	4/21/2022	0, 0	165, 0	15900, 0
CP20-493-000	Tennessee Gas Pipeline Company, L.L.C.	East 300 Upgrade Project	NJ, PA	6/30/2020	4/21/2022	0	115	50607
CP20-527-000	Columbia Gulf Transmission, LLC	East Lateral XPress Project	LA	9/24/2020	3/25/2022	8.14	183	46940
CP21-197-000	Kern River Gas Transmission Company	Delta Lateral Project	UT	4/23/2021	5/19/2022	35.84	140	0
CP21-78-000	ANR Pipeline Company	Wisconsin Access Project	WI	3/12/2021	5/19/2022	0	50.71	0
CP21-467-000	Texas Gas Transmission. LLC	Henderson County Expansion Project	IN, KY	6/25/2021	10/20/2022	24	220	4863
CP22-40-000	Eastern Shore Natural Gas Company	Southern Expansion Project	DE	1/18/2022	12/15/2022	0	7.3	1875

84. 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 Annual Energy Outlook 2023 (2023 AEO), U.S. LNG exports have been at record levels and is expected to continue in 2023. Natural gas production growth on the gulf coast and the southeast reflect increased activity in Haynesville Formation and Permian Basin, which are close to infrastructure connecting natural gas supply to growing LNG export facilities. Over the long-term, U.S. LNG exports are expected to increase with production, driven by growing global demand and construction of new LNG export facilities. A new liquification facility in Louisiana became fully operational in 2022, ahead of schedule, in addition to new LNG trains in Texas which are scheduled to be online by 2025.

According 2023 AEO, natural gas production is expected to remain at historically high levels through 2050 in order to support higher levels of domestic consumption and natural gas exports. The price of natural gas is expected to remain at or below $4.00/MMBtu over the projected period, despite the growth in LNG exports and increased domestic demand.

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

OUC Response:
In 2022 OUC entered into a four and a half year contract for the storage of natural gas to manage price volatility and provide backup fuel for emergency situations. The contract provides up to 40,000 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.

86. 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 exports have increased due to the rising global demand for coal. This increased global demand has strained the domestic supply and transportation of coal. OUC saw longer cycle times for coal trains along with tight supply markets in 2022.

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.

87. 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 not made any modifications to the coal handling, blending, unloading, and storage facilities. It should be noted that with the anticipated cold shutdown of Stanton Energy Center Unit 1 by the end of 2025 and conversion of Stanton Energy Center Unit 2 to utilize 100% natural gas by the end of 2027, coal handling and coal inventory at Stanton Energy Center would be reduced and subsequently eliminated.

88. 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.

89. 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.

90. [FPL Only] The following questions are with regard to hydrogen fuel creation and use at the Cavendish NextGen Hydrogen Hub:

a. Please explain how FPL plans to account for the produced hydrogen fuel that is integrated into the natural gas system for use at FPL's Okeechobee Clean Energy Center.

b. Please explain how FPL plans to price the produced hydrogen fuel that is integrated into FPL's natural gas system over the Ten-Year Site Plan time horizon

OUC Response:
This question is not applicable to OUC.

Extreme Weather

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

OUC Response:
Please refer to OUC's responses to the Florida PSC's Staff's Data Request #2, filed with the PSC on May 6, 2022. Those responses are included as Attachment A hereto.

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

OUC Response:
Please refer to OUC's responses to the Florida PSC's Staff's Data Request #2, filed with the PSC on May 6, 2022. Those responses are included as Attachment A hereto.

93. 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.

94. Please address the following questions regarding the impact of all major storm events, such as Hurricane Ian, with associated flooding, destruction of utility facilities and customer buildings, and forced customer permanent migration.

a. Based on actual data, please briefly summarize the impact that major storms have had on your utility's customer number, retail sales and peak load.
OUC Response:
OUC has not quantified the impact that major storms have had on OUC's number of customers, retail sales, or peak load.

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

OUC Response:

OUC has not quantified the impact that major storms have had on OUC's number of customers, retail sales, or peak load. Therefore, such impact is not included in OUC's customer/retail energy sales/demand forecasts.

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

OUC Response:

OUC has not quantified the impact that major storms have had on OUC's number of customers, retail sales, or peak load.

95. Has the Company had to make any upgrades to any generating units or changes to operations practices as a result of any FERC Orders addressing extreme weather planning within the last two years? If so, please describe.

OUC Response:

OUC has not made any upgrades to any generating units or changes to operations practices as a result of any FERC Orders addressing extreme weather planning within the last two years.

Attachment A

Orlando Utilities Commissions (OUC) Responses to Florida Public Service Commission's Review of the 2022 Ten-Year Site Plans for Florida's Electric Utilities Staff's Data Request #2

1. Please refer to NERC's Level 2 Alert, issued August 18, 2021, titled Cold Weather Preparations for Extreme Weather Events. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the recommendations contained within the alert.

OUC Response:
Please see below for summary of OUC's activities related to the subject recommendations.

Recommendation #1: Season Operating Plans – BA
OUC as a member of Florida Municipal Power Pool BA (FMPP) has participated in the refinement of the FMPP seasonal operating plans based on a review of the events that occurred in ERCOT and the various related communications including the NERC's Level 2 Alert, issued August 18, 2021, titled Cold Weather Preparations for Extreme Weather Events.

Recommendation #1: Season Operating Plans – TOP
OUC as a member of the Florida Reliability Coordinating Council (FRCC) has worked with the FRCC Reliability Coordinator and other members of the FRCC in the refinement of the FRCC's and OUC's seasonal operating plans based on a review of the events that occurred in ERCOT and the various related communications including the NERC's Level 2 Alert, issued August 18, 2021, titled Cold Weather Preparations for Extreme Weather Events.

Recommendation #2: GO Review of RCs, BAs, and TOPs seasonal operating plans – GO
OUC as a member of the FRCC and FMPP has worked with the other members and inside OUC to further refine the information available regarding generator availability, fuel supplies, and other related assumptions. OUC also reviewed its communication plans with fuel suppliers, RC, BA and inside OUC.

Recommendation #3: GO communicate with RCs, BAs, and TOP's de-rates – GO
OUC GO as a member of the FRCC and FMPP has worked with the other members and inside OUC to further refine the information available regarding generator forecasted and actual unit derates. OUC TOP and as member of the FMPP BA has worked to further refine the incorporation of that information into operational plans.

Recommendation #4: Manual and Automatic Load Shedding
OUC does a review of critical loads and excludes them from the rolling blackout and under frequency load shedding programs. At least annually, OUC performs a review of its load and frequency shedding capabilities to ensure accuracy and ability to accomplish their respective tasks.

Recommendation #5: GO conduct dual fuel assessments and monitor fuel
OUC regularly reviews its dual fueled units to verify the units can reliably operate on both primary and secondary fuel sources and that primary and secondary fuel is available.

2. Please refer to FERC Order Approving Cold Weather Reliability Standards, issued August 24, 2021. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the revisions to the NERC Reliability Standards that become effective April 2023.

OUC Response:
Please see below for summary of OUC's activities related to the subject revisions.

EOP-011-2 R1 Part 1.2.6: Provisions do determine impact of weather conditions - TOP
OUC TOP and OUC as a member of the FMPP BA already had in place plans to determine the reliability impacts of cold weather conditions, however those plans will be reviewed and updated as needed to comply with the changes in the standard.

EOP-011-2 R7: Generator cold weather plans:

OUC has created a Cold Weather Plan for each site and is currently conducting studies with cold weather subject matter experts to ensure each site maintains reliability and is protected should an extreme cold weather event occur.

IRO-010-4 R1 Part 1.3: Cold Weather Data:
OUC will provide data to the FRCC RC as requested within the RC's data specification.

TOP-003-5 R1 Part 1.3: Cold Weather Data:
OUC will be updating its data specification to conform to the revised standard.

Please refer to NERC's Project 2021-07: Extreme Cold Weather Grid Operations, Preparedness, and Coordination. Is the Utility a participant in this project? If so, please explain what way.

OUC Response:
OUC is monitoring the NERC's Project 2021-07: Extreme Cold Weather Grid Operations, Preparedness, and Coordination project and as appropriate will be commenting on the development, participating in related events, and voting on the standards.

Please refer to the FERC, NERC, and Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and the South Central United States (2021 Cold Weather Report), issued November 2021. Please indicate what changes, if any, the Utility has implemented or intends to implement to address the recommended revisions listed below to the NERC Reliability Standards identified in the 2021 Cold Weather Report.

Identify and protect cold-weather critical components.

Build all new and retrofit existing units to operate during extreme weather conditions, which include the impact of wind and precipitation.

Perform annual training on winterization plans. If already incorporated, please provide the most recent winterization plan.

Develop Corrective Action Plans for any affected generating units.

Provide the balancing authority the percentage of generating capacity that can be relied upon during forecasted cold weather.

Account for wind and precipitation when providing temperature data to the balancing authority.

OUC Response:

a. **Identify and protect cold-weather critical components.**

Gas generation has identified and implemented cold weather protections to its facilities to the extent of its knowledge and expertise. OUC is also conducting studies with cold weather subject matter experts to see if OUC needs to take additional measures to further protect the reliability of each facility.

Build all new and retrofit existing units to operate during extreme weather conditions, which include the impact of wind and precipitation.

Refer to response to (a) above.

Perform annual training on winterization plans. If already incorporated, please provide the most recent winterization plan.

Formal training on site-specific plans is being developed. In the interim, the plans and procedures have been reviewed by OUC staff.

Develop Corrective Action Plans for any affected generating units.

OUC will identify and take any appropriate corrective action as necessary.

Provide the balancing authority the percentage of generating capacity that can be relied upon during forecasted cold weather.

OUC GO as a member of FMPP BA regularly shares data related to cold weather events and reviews communications for use during those events.

Account for wind and precipitation when providing temperature data to the balancing authority.

Wind and precipitation are not explicitly accounted for when providing temperature data to the balancing authority.

Will the Utility's current capacity shortage plan require updating following the revisions to the NERC Reliability Standards that will go into effect April 2023 or the recommended revisions from the 2021 Cold Weather Report? If so, please identify the changes.

OUC Response:
No changes will be required.

For your generating units, please and provide the following information:

Identify any generating unit that has been winterized and describe the winterization activities that have been completed for each.

Identify any generating unit that still requires winterization and describe the winterization activities to be completed for each.

Identify any generating units the Utility does not intend to winterize and explain why.

OUC Response:

a. **Identify any generating unit that has been winterized and describe the winterization activities that have been completed for each.**

OUC's cold weather preparedness plans include extensive winterization activities. OUC will continue to study the units to determine if additional activities are necessary.

Identify any generating unit that still requires winterization and describe the winterization activities to be completed for each.

OUC's cold weather preparedness plans include extensive winterization activities. OUC will continue to study the units to determine if additional activities are necessary.

Identify any generating units the Utility does not intend to winterize and explain why.

This question is not applicable to OUC.

Please list and describe all winterization activities the Utility has completed or intends to complete for its natural gas infrastructure. If none, please explain why.

OUC Response:
OUC's cold weather preparedness plans include extensive winterization activities. OUC will continue to study the units to determine if additional activities are necessary.

Please identify any generating units that have experienced forced outages or derates due to cold weather conditions within the last ten-year period.

Please explain if these generating units have had corrective action plans developed for the identified equipment. If so, what has been done to evaluate whether the corrective action plan applies to similar equipment for other generating units in the Utility's generating fleet.

OUC Response:
OUC has not had any generating units that have experienced forced outages or derates due to cold weather conditions within the last ten-year period.

Please identify each of the Utility's generating units that have dual fuel capabilities. As part of this response, please provide the following for each applicable generating unit.

Generating unit name and location.

Net capacity by seasonal peak (Summer/Winter).

Whether fuel switching derates/uprates the unit (and if so, by what amount).

Primary and secondary fuel type and sources.

Number of days the generating unit could operate at full load using the secondary fuel source.

Amount of time required to switch to secondary fuel.

OUC Response:

a. **Generating unit name and location.**

Name	Address
Stanton Energy Center Unit A	5150 S Alafaya Trail, Orlando, FL 32831
Stanton Energy Center Unit B	5100 S Alafaya Trail, Orlando, FL 32831
Indian River Plant	7800 South US Hwy 1, Titusville, FL 32780
Osceola Generating Station	8400 Community Center Rd, St Cloud, FL 34773

b. **Net capacity by seasonal peak (Summer/Winter).**

Name	Summer Capacity (MW)	Winter Capacity (MW)
Stanton Energy Center Unit A	657	675
Stanton Energy Center Unit B	292	307
Indian River Plant Unit A	32	37
Indian River Plant Unit B	32	37
Indian River Plant Unit C	105	112
Indian River Plant Unit D	105	112
Osceola Generating Station Unit 1	155	155
Osceola Generating Station Unit 2	155	155
Osceola Generating Station Unit 3	155	155

c. **Whether fuel switching derates/uprates the unit (and if so, by what amount).**

Name	Uprate/(Derate) on Secondary Fuel (MW)

Stanton Energy Center Unit A	(152)
Stanton Energy Center Unit B	(37)
Indian River Plant Unit A	0
Indian River Plant Unit B	0
Indian River Plant Unit C	0
Indian River Plant Unit D	0
Osceola Generating Station Unit 1	0
Osceola Generating Station Unit 2	0
Osceola Generating Station Unit 3	0

Primary and secondary fuel type and sources.

Name	Primary Fuel Type and Source	Secondary Fuel Type and Source
Stanton Energy Center Unit A	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Stanton Energy Center Unit B	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Indian River Plant Unit A	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Indian River Plant Unit B	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Indian River Plant Unit C	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Indian River Plant Unit D	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Osceola Generating Station Unit 1	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Osceola Generating Station Unit 2	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank
Osceola Generating Station Unit 3	Natural Gas, FGT Pipeline	#2 Diesel Oil, Onsite Tank

Number of days the generating unit could operate at full load using the secondary fuel source.

Name	Days at Full Load on Secondary Fuel
Stanton Energy Center Unit A	2.3 Days
Stanton Energy Center Unit B	2.4 Days
Indian River Plant Site	0.17 Days
Osceola Generating Station Site	4.5 Days

Amount of time required to switch to secondary fuel.

15 minutes for all units

Please identify how many alerts and advisories, due to cold weather, have been issued within the last ten-year period, and describe each event that lead to the issuance of each alert/advisory.

As part of this response, please indicate whether interruptible/curtailable customers were interrupted during each event, and if so, the duration of the interruption.

OUC Response:
Each year, OUC anticipates and proactively promotes cold weather conservation tips. Customers are provided with information on ways to stay safe, warm, and comfortable while also saving energy. We also prepare to enhance cold weather messaging through paid and earned media should temperatures drop below 32 degrees. If such an event occurs, OUC releases a media advisory and information is provided through special emails, social media videos and infographics, and paid media. Samples of news releases are below.

- 2015 – OUC Ready For Freezing Temps
- 2016 – OUC Ready For Tonight's Cold Temps
- 2018 – OUC Ready For Tonight's Cold Temps
- 2022 – OUC Ready For Tonight's Cold Temps

In the last ten-year period, no customers, interruptible/curtailable or other, were interrupted during a cold weather event.

Please identify the number of times the Utility has had to perform rolling blackouts within the last ten-year period. As part of this response, please provide the reason for each rolling blackout, how many megawatts were impacted, and the duration of each rolling blackout.

OUC Response:
OUC has not performed any rolling blackouts over the last ten-year period.

Please identify the total number of megawatts that can be controlled during rolling blackouts. As part of this response, please describe how this amount was determined, the priorities for interrupting firm load, and provide the anticipated duration between rolling blackouts.

OUC Response:
OUC can control 360 MW during peak; OUC targets a value of about 25% of system load. This maximizes the availability of rotating load shed while minimizing potential impact to higher priority customers. Firm load is shed using feeder priority values which are assigned based on the highest rated customer on that feeder. OUC has 8 levels of customer priority considered for restoration, under frequency load shedding (UFLS) and rotating manual load shed. Priority feeders 6-8 (the 3 lowest in terms of importance) are used for rolling blackouts. Anticipated time for rolling blackouts is 15 minutes.

Please explain how the Utility coordinates with cogenerators, qualifying facilities, and other non-utility generators during cold weather events to maximize generating capacity. As part of this response, please explain how the Utility determines as-available energy prices if all available Utility assets are already dispatched.

OUC Response:
This question is not applicable to OUC.

Please list each form of communication (such as phone calls, text, utility website, social media, etc.) the Utility uses to inform customers of anticipated cold weather events. As part of this response, please provide a sample of such communications.

OUC Response:

OUC creates a communications plan for all types of weather events – from storms to hurricanes to cold weather – and uses a variety of channels to communicate with customers, employees and our community including news releases, social media posts, digital ads, preparation videos, enewsletters, emails and broadcast alerts. Below are several examples and messaging for all OUC channels – website, eNewsletter, bill message, IVR, social media, text alerts, outage map, etc.

Utility Website – <u>OUC.com/ColdWeather</u>

SCAM ALERT: Be alert for potential scammers trying to impersonate OUC employees over the phone. We'll never call or text to request bank or credit card information over the phone. If you get a suspicious call, hang up! Protect yourself from scammers and visit OUC.com/scams.

Home / Residential / Save Energy, Water & Money / Conservation Tips / Cold Weather Guide

Cold Weather Guide

When the temperature drops, utility bills can spike.

Learn about Cold Weather and High Bills

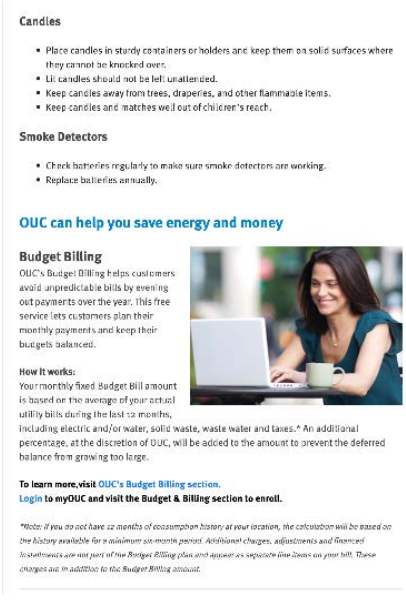
OUC COLD WEATHER SAVINGS+SAFETY GUIDE WEATHERING FLORIDA'S WINTERS

Central Florida is known for mild winters, but when the temperatures do drop, remember these important tips to keep your family and your home safe:

- Keep portable heaters at least three feet away from furniture, bedding, walls, clothing and other flammable items.
- An electric blanket can help keep you warm on a cold night, but follow the manufacturer's instructions and make sure you turn it off and unplug it when it's not in use. Never tuck an electrical blanket in.
- Never use your stove or oven to heat your home. It can cause fires.
- Cover any exposed water pipes and leave pool pumps running to prevent freezing.
- Keep thermostats set at 68 degrees or lower to save energy.
- At night, close blinds or drapes to help keep cold air out. During the day, open blinds/drapes to let the warm sunshine in.

Fireplaces

- Make sure your chimney flue is open before using.
- Use a safety screen for protection from flames and embers.
- Never leave a fire or smoldering embers unattended.



Candles

- Place candles in sturdy containers or holders and keep them on solid surfaces where they cannot be knocked over.
- Lit candles should not be left unattended.
- Keep candles away from trees, draperies, and other flammable items.
- Keep candles and matches well out of children's reach.

Smoke Detectors

- Check batteries regularly to make sure smoke detectors are working.
- Replace batteries annually.

OUC can help you save energy and money

Budget Billing

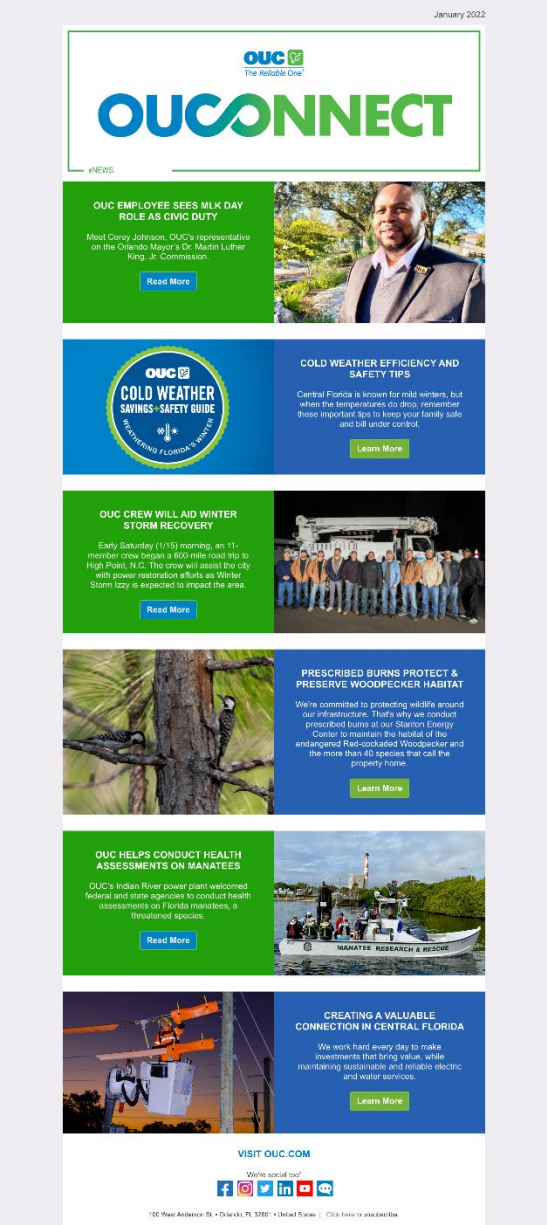
OUC's Budget Billing helps customers avoid unpredictable bills by evening out payments over the year. This free service lets customers plan their monthly payments and keep their budgets balanced.

How it works:

Your monthly fixed Budget Bill amount is based on the average of your actual utility bills during the last 12 months, including electric and/or water, solid waste, waste water and taxes.^ An additional percentage, at the discretion of OUC, will be added to the amount to prevent the deferred balance from growing too large.

To learn more, visit OUC's Budget Billing section.
Login to myOUC and visit the Budget & Billing section to enroll.

**Note: If you do not have 12 months of consumption history at your location, the calculation will be based on the history available for a minimum six-month period. Additional charges, adjustments and financed installments are not part of the Budget Billing plan and appear as separate line items on your bill. These charges are in addition to the Budget Billing amount.*


January 2022
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The Reliable One
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OUC EMPLOYEE SEES MLK DAY ROLE AS CIVIC DUTY
Meet Corey Johnson, OUC's representative on the Orlando Mayor's Dr. Martin Luther King, Jr. Commission.
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COLD WEATHER SAVINGS + SAFETY GUIDE
WEATHERING FLORIDA'S WINTER
COLD WEATHER EFFICIENCY AND SAFETY TIPS
Central Florida is known for mild winters, but when the temperatures do drop, remember these important tips to keep your family safe and bill under control.
Learn More
OUC CREW WILL AID WINTER STORM RECOVERY
Early Saturday (1/15) morning, an 11-member crew began a 600-mile road trip to High Point, N.C. The crew will assist the city with power restoration efforts as Winter Storm Izzy is expected to impact the area.
Read More
PRESCRIBED BURNS PROTECT & PRESERVE WOODPECKER HABITAT
We're committed to protecting wildlife around our infrastructure. That's why we conduct prescribed burns at our Stanton Energy Center to maintain the habitat of the endangered Red-cockaded Woodpecker and the more than 40 species that call the property home.
Learn More
OUC HELPS CONDUCT HEALTH ASSESSMENTS ON MANATEES
OUC's Indian River power plant welcomed federal and state agencies to conduct health assessments on Florida manatees, a threatened species.
Read More
MANATEE RESEARCH & RESCUE
CREATING A VALUABLE CONNECTION IN CENTRAL FLORIDA
We work hard every day to make investments that bring value, while maintaining sustainable and reliable electric and water services.
Learn More
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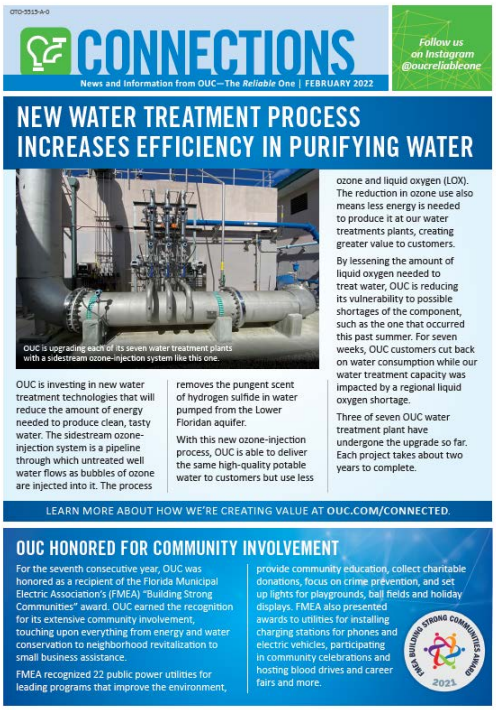
We're social too!

Customer Newsletters



CONNECTIONS

News and Information from OUC—The Reliable One | FEBRUARY 2022

Follow us on Instagram @oucreliableone

NEW WATER TREATMENT PROCESS INCREASES EFFICIENCY IN PURIFYING WATER

OUC is upgrading each of its seven water treatment plants with a sidestream ozone-injection system like this one.

OUC is investing in new water treatment technologies that will reduce the amount of energy needed to produce clean, tasty water. The sidestream ozone-injection system is a pipeline through which untreated well water flows as bubbles of ozone are injected into it. The process removes the pungent scent of hydrogen sulfide in water pumped from the Lower Floridan aquifer.

With this new ozone-injection process, OUC is able to deliver the same high-quality potable water to customers but use less ozone and liquid oxygen (LOX). The reduction in ozone use also means less energy is needed to produce it at our water treatments plants, creating greater value to customers.

By lessening the amount of liquid oxygen needed to treat water, OUC is reducing its vulnerability to possible shortages of the component, such as the one that occurred this past summer. For seven weeks, OUC customers cut back on water consumption while our water treatment capacity was impacted by a regional liquid oxygen shortage.

Three of seven OUC water treatment plant have undergone the upgrade so far. Each project takes about two years to complete.

LEARN MORE ABOUT HOW WE'RE CREATING VALUE AT OUC.COM/CONNECTED.

OUC HONORED FOR COMMUNITY INVOLVEMENT

For the seventh consecutive year, OUC was honored as a recipient of the Florida Municipal Electric Association's (FMEA) "Building Strong Communities" award. OUC earned the recognition for its extensive community involvement, touching upon everything from energy and water conservation to neighborhood revitalization to small business assistance.

FMEA recognized 22 public power utilities for leading programs that improve the environment, provide community education, collect charitable donations, focus on crime prevention, and set up lights for playgrounds, ball fields and holiday displays. FMEA also presented awards to utilities for installing charging stations for phones and electric vehicles, participating in community celebrations and hosting blood drives and career fairs and more.

COLD WEATHER ENERGY EFFICIENCY TIPS

Did you know winter electric bills can be two to three times higher than fall or spring bills? Check out these tips to warm up to savings when cold weather comes our way.

- Keep your thermostat at 68 degrees. For every degree below 68, you can save $4 to $6 on your bill.
- Set the A/C fan to 'auto'.
- Replace dirty A/C filters monthly.
- Install a programmable thermostat to adjust the temperature automatically.
- Keep drapes and blinds open during the day to let in the sun's heat.
- Set your ceiling fan to run clockwise to force warmer air toward the floor.

Find more winter safety and efficiency tips at OUC.com/coldweather.

2020 WATER QUALITY REPORT

Learn more about H_2OUC via the 2020 OUC Water Quality Report at OUC.com/wqr2020. The report contains important information about the source and quality of your drinking water.

To request a printed copy of the 2020 Water Quality Report, call 407-423-9018 or visit OUC.com/wqrrequest.

Para conocer más en español sobre el Reporte Anual de Calidad de Agua 2020, llámanos al 407-423-9018.

Great-Tasting Tap Water H2OUC www.ouc.com

UPGRADE INSULATION AND GET A REBATE!

Adding attic insulation is one of the most effective and least expensive things you can do to increase the energy efficiency of your home. OUC offers residential customers a rebate of 10 cents per square foot on upgraded attic insulation with an R-30 value or higher.

DOOR/WINDOW LEAKS CAN DRAIN YOUR WALLET

Sealing door and window leaks can improve energy efficiency, leading to bill savings. Simple fixes can include installing weather stripping on doors and caulking around windows. Older homes can even reap major benefits from ENERGY STAR® windows and OUC can help with the costs with a $1.50/ square foot rebate.

Visit OUC.com/rebate for more on OUC's energy rebates.

Para ver esta edición de OUConexión, por favor vaya en línea a espanol.ouc.com.

OUC The Reliable One

ORLANDO UTILITIES COMMISSION
RELIABLE PLAZA • 100 W. Anderson Street • Orlando, FL 32801
Tel: 407-423-9018 • ouc.com

@OUCReliableOne OUCblog.com OUCTheReliableOne

Social Media

OUC The Reliable One FREEZE ALERT

In frigid temperature below 32 degrees, keep water flowing in your home by opening a very slow drip in your bathtub and outside faucet.

OUC The Reliable One FREEZE ALERT

OUC is prepared for impending extreme cold weather.

- ✔ Additional staff is on-hand to respond quickly.
- ✔ Instructional photos and videos are available on OUC.com/coldweather.
- ✔ Emergency Water Stations will be available in the event of massive system outages.

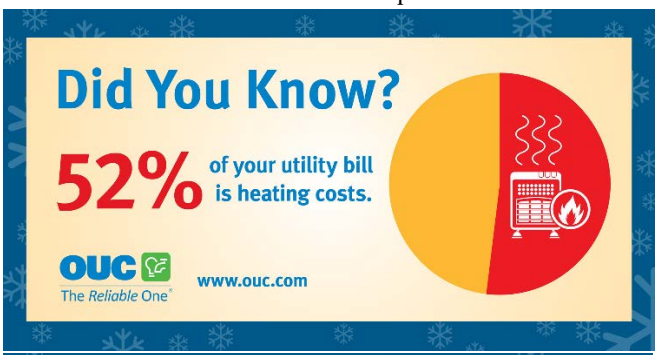
OUC The Reliable One FREEZE ALERT

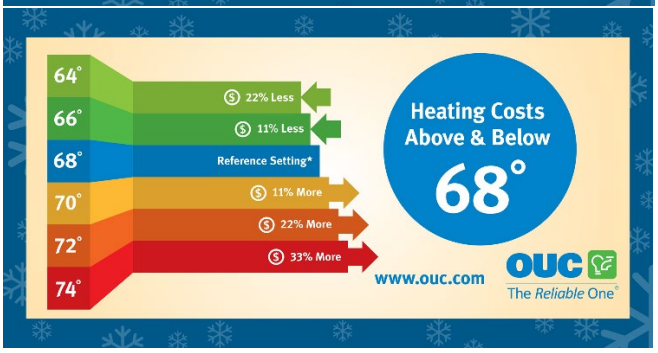
Your Extreme Cold Weather Check List

- ____ Check OUC.com/coldweather for instructional videos and photos.
- ____ Wrap exposed outdoor pipes with old towels or sheets to provide insulation.
- ____ Open a very slow drip in your bathtub and outdoor faucet to keep water moving.
- ____ Show family members how to turn off the home's water supply, if needed.
- ____ Have your warranty information on-hand for any necessary repairs.

OUC The Reliable One FREEZE ALERT

Conserve power. Heat your home at 68° or cooler with the thermostat fan on "auto." This is the most effective way to lower most electric bills and every degree makes a difference.

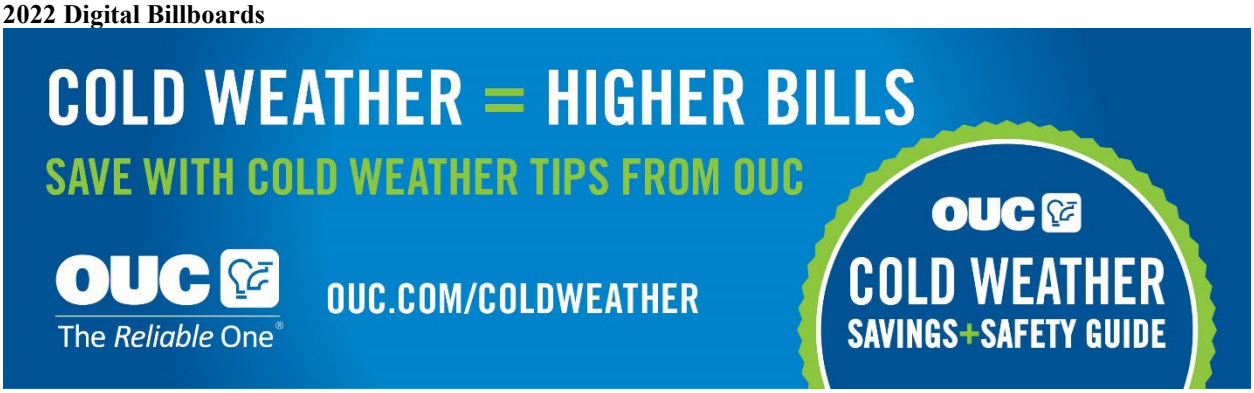




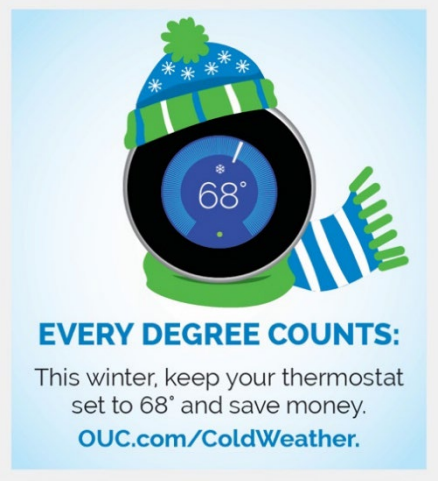
Ad Campaigns
2014 & 2018

2022 Digital Ads

2022 Digital Billboards



On Bill Message



Please refer to the Florida cold weather event from January 29-31, 2022, and provide the following for each day during the event.

Anticipated load forecast.

Anticipated operating reserve (with and without demand response).

Actual load, and if available, actual operating reserve.

Amount of customer outages due to cold weather that occurred, if any.

Amount of generating capacity derated or forced offline due to cold weather, if any. If forced outages occurred, identify each generating unit derated or forced offline, and the cause of the derating or forced outage, if known.

Whether demand response and/or interruptible/curtailable assets were activated. If so, please identify which programs, the number of customers interrupted, the amount of capacity interrupted, and the frequency of interruptions.

OUC Response:

The table below summarizes items a-c by day for the FMPP Balancing Authority, which includes the combined generation and load obligations of FMPA, Lakeland Electric, and Orlando Utilities Commission. Items d-f do not apply/were not experienced.

Date	Projected Peak (MW)	Projected Op. Reserve (MW)	Actual Peak (MW)	Actual Op. Reserve (MW)
1/29/22	3,085	1,232	2,685	1,632
1/30/22	3,475	884	3,138	1,221
1/31/22	3,260	1,043	3,163	1,140

Please refer to the Florida cold weather event from January 29-31, 2022. Please explain if any winterization plans were enacted during this time. If so, please describe what activities were involved.

OUC Response:
Cold weather procedures were implemented and consisted of the following: activating the heat trace system, deploying portable heaters, running catalytic gas heaters on natural gas systems, and taking temperature readings on certain processes with infrared forward looking infrared (FLIR) cameras.

With temperatures forecasted in the low 30s for the days of January 29-31, 2022, OUC quickly mobilized increased communications about cold weather (please see below for samples of the communications). This included a news release, media pitches, media coverage, enewsletter articles, and social media posts. OUC also placed dedicated media buys including online ads, radio spots, and outdoor billboards educating customers with cold-weather efficiency tips and ways to save on energy. The campaign delivered more than 3 million impressions.

News Release
ORLANDO – OUC—The *Reliable* One is ready to provide extra power for home heating systems during this cold snap. All OUC power generation and transmission systems are ready to go, and extra crews will be standing by through the evening and early morning hours. With the cooler weather, OUC wants to remind customers to be safe when keeping warm. By following these energy saving and safety tips, customers can stay comfortable during the cold weather:

- Set your thermostat to 68 degrees. For each degree above 68, the heating portion of your bill will increase four to six percent.

- Heating may account for more than half of a home's energy use this week.
- Turn the heater down or off when no one is home.
- Set the thermostat fan to auto and replace dirty filters to allow your system to operate as efficiently as possible.
- Keep portable heaters at least three feet away from furniture, bedding, walls, clothing and other flammable items.
- An electric blanket can help keep you warm on a cold night, but follow the manufacturer's instructions and make sure to turn it off and unplug it when not in use.
- Never tuck in an electrical blanket.
- Never use your stove or oven to heat your home.
- If temperatures drop below freezing, cover any exposed water pipes and leave pool pumps running.
- If the sun does come out today, open drapes and blinds to let the sun's warmth in. Then, close those drapes and blinds tonight.
- Check under doors and around windows for cool air coming in and seal these areas.
- You can set a ceiling fan to run in the clock-wise direction. Doing so, will force warmer air towards the floor.

Customers may report outages by calling OUC's **24-hour Emergency Service hotline** at **407-423-9018**

About OUC—The **Reliable** *One*
Established in 1923 by a special act of the Florida Legislature, OUC—The Reliable ***One is the second largest municipal utility in Florida. OUC provides electric and water services to about 400,000 accounts in Orlando, St. Cloud and parts of unincorporated Orange and Osceola counties. Visit www.ouc.com to learn more about our commitment to reliability, affordability and sustainability.***

Media Pitch
With temperatures expected to dip below freezing this weekend, viewers likely are considering turning the heat on, which can cause their energy bills to spike. To keep that from happening, OUC has some tips for how they can stay warm while keeping their utility bills in check, as well as how to prevent water pipes from freezing, which I've included below.

You can find b-roll, including a few soundbites from Dave Mayer, OUC's Sustainability Supervisor, here: https://we.tl/t-GegVarKDKD. You can find graphics featuring the tips below here: https://www.dropbox.com/sh/h575qwtafw448y5/AAAXjGgeDXn0rblNyaIDciTba?dl=0.

- As the Greater Orlando area experiences an ongoing cold snap, many Central Floridians are turning on their heat – but that can cause your utility bill to skyrocket.
- In fact, winter electric bills can be two to three times higher than fall or spring bills … and heating makes up 52% of your electric bill.
- OUC has a few tips to help keep your energy bill low this winter.
- If you're going to turn your heat on, set the thermostat to 68 degrees and switch the fan to auto. Lowering your thermostat is the easiest and most effective way to lower your bill, and every degree makes a difference.
- To save even more, lower your thermostat to 65 degrees or cooler at night and when you're away from home.
- Set your ceiling fan to rotate clockwise, which will circulate warm air around the room.
- Space heaters, electric blankets and layering your clothes are also ways to keep warm without turning up the heat.
- If you're turning on a space heater to heat a room, keep it at least three feet away from furniture, bedding, walls, clothing and other flammable items.
- If you're using an electric blanket to stay toasty, be sure to follow the manufacturer's instructions, and never tuck it into your bed.
- With temperatures expected to dip below 32 degrees this weekend, viewers should also check their pipes for freezing.

- Wrap exposed outdoor pipes with old towels or sheets to provide insulation.
- Open a very slow drip in your bathtub or outdoor faucet to keep water moving.

Media Coverage

January 27, 2022

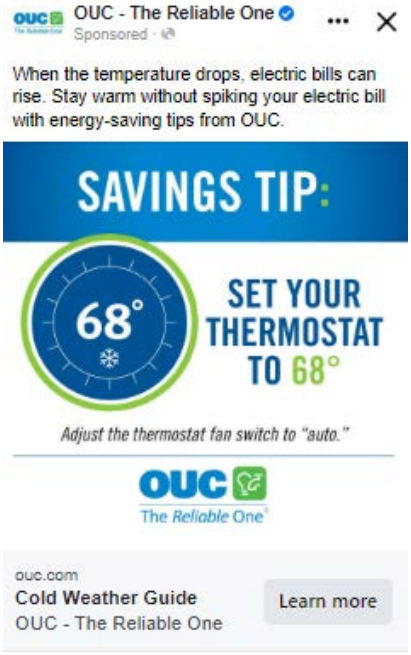
- Duke Energy, OUC ready for cold weekend but scattered outages could happen (Jan. 27, 2022 -- Orlando Sentinel)

January 28, 2022

- WESH 2 News/CW18
  - Dave Mayer, OUC's Sustainability Supervisor, shared tips on ways to save energy and keep costs down while staying warm during cold temperatures.
- WKMG News 6
- Orlando cold weather: What you need to know as freezing temps expected across region (Orlando Sentinel)

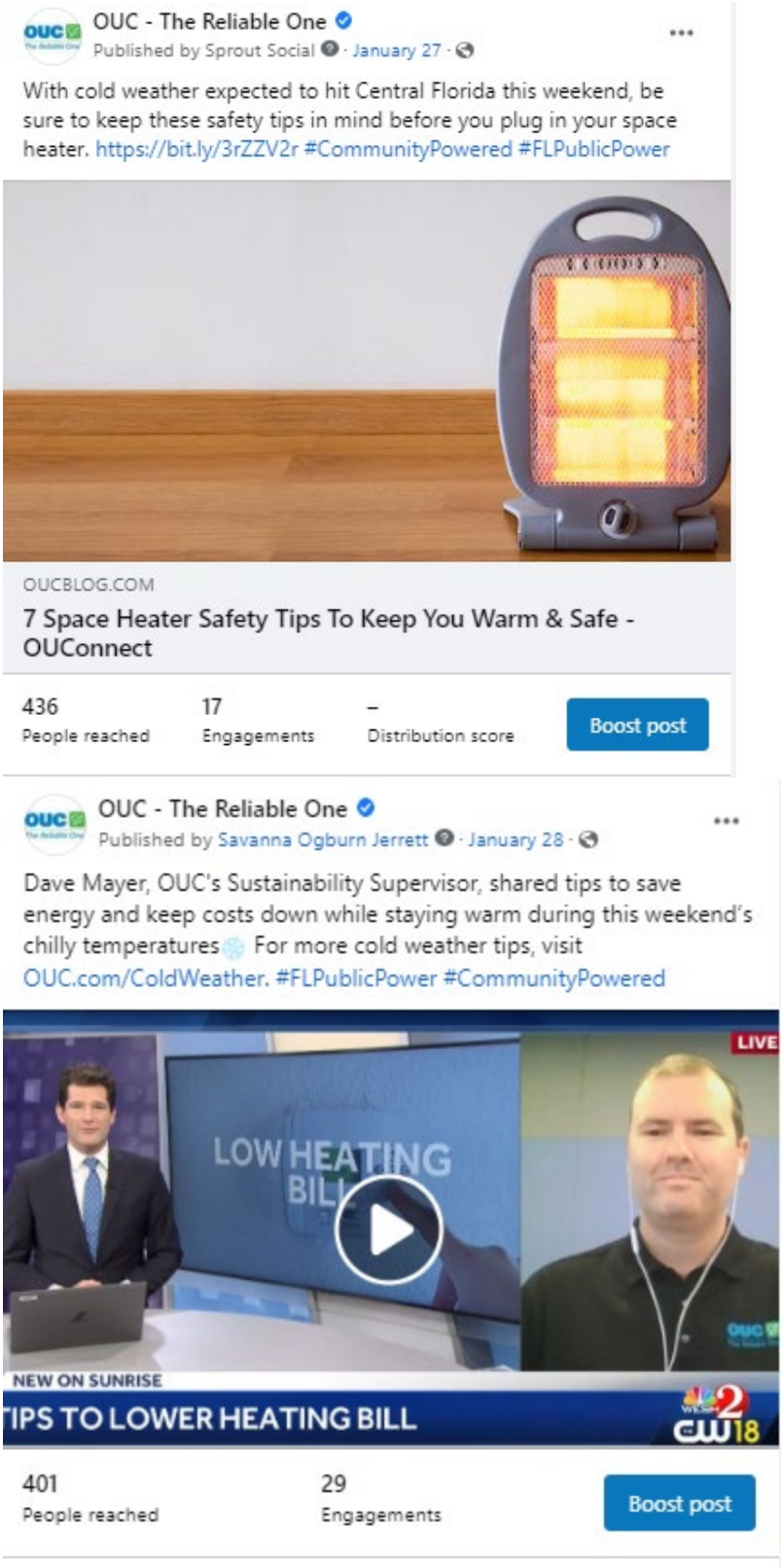
Social Media Ad

From January 27 – February 1, 2022 OUC ran social media ads on Facebook and Instagram promoting the Cold Weather Guide at OUC.com/ColdWeather. The ad targeted ages 18 – 65+ living in Orlando, Fla. Approximately 854 link clicks were generated and reached 40,762 users.



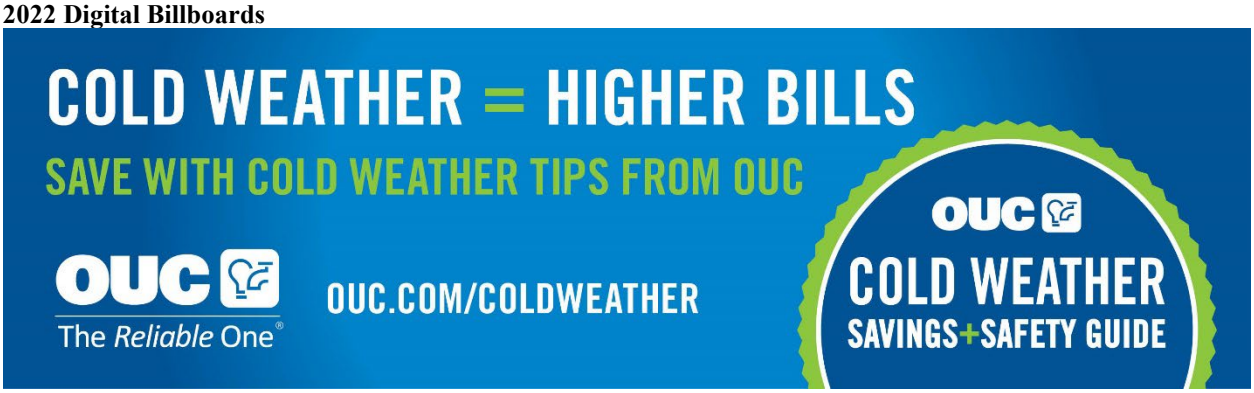
Social Media Posts

Posts on OUC's Facebook, Twitter and Instagram pages between January 27 – February 1, 2022



2022 Digital Ads

2022 Digital Billboards



Please refer to the NERC 2021-2022 Winter Reliability Assessment, issued November 2021, for the following questions. Please provide load forecast and generation availability data provided to your regional entity for use in NERC's winter reliability assessment. As part of your response, explain how the data was derived and what assumptions were used.

OUC Response:

The forecast OUC and St. Cloud winter peak is 1,187 MW for 2021/2022 as shown in OUC's 2021 Ten Year Site Plan ("TYSP"). The Florida Reliability Coordinating Council ("FRCC") has OUC include the peak load served by OUC for non-FRCC reporting utilities (Mt. Dora, Winter Park, and Chattahoochee) and exclude St. Cloud's entitlements in Stanton Unit 2. Thus, for FRCC reporting purposes OUC's forecast winter peak is 1,212 MW.

Forecast 2021/2022 Winter Peak with Normal Weather (MW)

OUC & Winter Park	Less Winter Park	St. Cloud	Total OUC & St. Cloud[1]	Mount Dora	Chattahoochee	Winter Park	Less St. Cloud SEC2 Entitlements	Total[2]
1,031	(17)	173	1,187	17	6	17	(15)	1,212

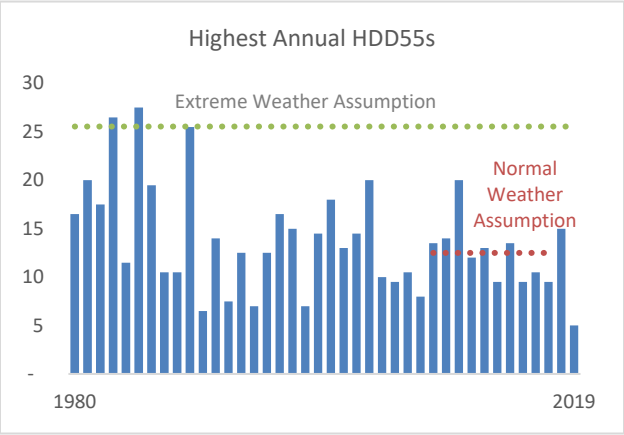
The winter peak is forecasted assuming normal weather which is calculated using heating degree days with a 55° F baseline ("HDD55"). The highest daily HDD55s are summarized by month and year for the period of 2008 and 2017 and ranked from highest to lowest for each year because the coldest temperatures do not always occur in the same month. The 9-year average of the highest, 2nd highest, 3rd highest…12th highest ranked values are then allocated to each month based on each month's 9-year average HDD55s.

Winter Extreme Load Forecast

The Florida Reliability Coordinating Council ("FRCC") has requested that "for a 2021/2022 extreme winter load scenario, the LFWG[3] recommends each FRCC member submit their forecasted winter 2021/2202 load based on the upper bound of a 90% confidence interval for deviations from normal winter weather conditions, all else equal. The upper bound of a 90% confidence interval represents a load level estimate such that there is a 5% probability that loads may be higher than projected as driven from deviations from normal winter weather conditions

For this extreme forecast the HDD55s were calculated by expanding the historic range to include 1980 through 2019 and by using the 95th percentile for the 39-year period rather than the average. This method is similar to the approach used by Duke Energy, TECO and Lakeland Electric. The highest annual HDD55s are shown in the chart below left along with the HDD55s at the 95th percentile and the 9-year average used for normal weather. The chart below right shows the normal and assumed extreme weather HDD55s by month.

As shown in the table below using the extreme weather assumptions raises OUC's forecast winter peak to 1,421 MW, a 234 MW or 20 percent increase (19 percent based on FRCC reporting).



Forecast 2021/2022 Winter Peak with Extreme Weather (P95)

[1] Matches 2021/2022 forecast peak shown on Schedule 4 of OUC's 2021 Ten Year Site Plan
[2] Matches FRCC reporting
[3] Load forecast working group ("LFWG")

OUC & Winter Park	Less Winter Park	St. Cloud	Total OUC & St. Cloud	Mount Dora	Chattahoochee	Winter Park	Less St. Cloud SEC2 Entitlements	Total
1,202	(17)	236	1,421	17	6	17	(15)	1,446

18. ***[TECO & FPL Only] Please identify and describe any actions undertaken to encourage adoption of natural gas heating over electric resistance (strip) heating. If no actions have been taken, please explain why.***

OUC Response:
This question is not applicable to OUC.

Sheet #	DR No.	Tab Name
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TYSP Year	2023
Staff's Data Request #	1
Question No.	3

Financial Assumptions
Base Case

AFUDC RATE		7.5	%
CAPITALIZATION RATIOS:			
	DEBT	N/A	%
	PREFERRED	N/A	%
	EQUITY	N/A	%
RATE OF RETURN			
	DEBT	N/A	%
	PREFERRED	N/A	%
	EQUITY	N/A	%
INCOME TAX RATE:			
	STATE	N/A	%
	FEDERAL	N/A	%
	EFFECTIVE	N/A	%
OTHER TAX RATE:		N/A	%
DISCOUNT RATE:		7.5	%
TAX			
DEPRECIATION RATE:		N/A	%

TYSP Year 2023
Staff's Data Request # 1
Question No. 3

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
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
2031	2.0	2.0	2.0	2.0
2032	2.0	2.0	2.0	2.0

TYSP Year 2023

Staff's Data Request # 1

Question No. 4

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
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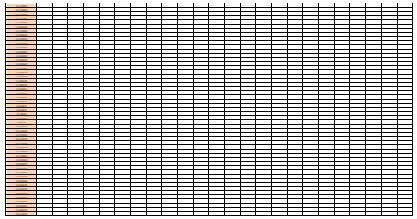

TYSP Year 2023
Staff's Data Request # 1
Question No. 5

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2022	1	1,156	0	1,156	1/31/2022	800	41
	2	1,032	0	1,032	2/25/2022	1700	85
	3	1,067	0	1,067	3/8/2022	1600	86
	4	1,195	0	1,195	4/1/2022	1800	81
	5	1,297	0	1,297	5/23/2022	1800	91
	6	1,409	0	1,409	6/23/2022	1800	94
	7	1,403	0	1,403	7/13/2022	1800	93
	8	1,372	0	1,372	8/1/2022	1700	93
	9	1,385	0	1,385	9/6/2022	1700	76
	10	1,158	0	1,158	10/31/2022	1700	89
	11	1,190	0	1,190	11/1/2022	1700	87
	12	1,120	0	1,120	12/25/2022	1000	33
2021	1	890	0	890	1/19/2021	900	61
	2	1,073	0	1,073	2/4/2021	900	67
	3	1,120	0	1,120	3/26/2021	1700	70
	4	1,137	0	1,137	4/14/2021	1700	72
	5	1,323	0	1,323	5/5/2021	1600	78
	6	1,334	0	1,334	6/11/2021	1700	81
	7	1,360	0	1,360	7/22/2021	1600	81
	8	1,377	0	1,377	8/24/2021	1800	83
	9	1,293	0	1,293	9/2/2021	1700	80
	10	1,288	0	1,288	10/7/2021	1700	76
	11	984	0	984	11/3/2021	1700	65
	12	978	0	978	12/16/2021	1700	68
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

Notes

Data represents the monthly coincident peak demands for OUC and the City of St. Cloud combined.

TYSP Year 2023
Staff's Data Request # 1
Question No. 22

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

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public DCFC PEV Charging Stations.	Cumulative Impact of PEVs		
				Summer Demand	Winter Demand	Annual Energy
				(MW)	(MW)	(GWh)
2023						
2024						
2025						
2026						
2027						
2028						
2029						
2030						
2031						
2032						
Notes						
(Include Notes Here)						

TYSP Year 2023
Staff's Data Request # 1
Question No. 28

This question is not apllicable 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
2013									
2014									
2015									
2016									
2017									
2018									
2019									
2020									
2021									
2022									
Notes									
(Include Notes Here)									

TYSP Year	2023	This question is not apllicable as OUC does not currently offer
Staff's Data Request #	1	demand response programs to its customers
Question No.	29	

[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
2013										
2014										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
Notes										
(Include Notes Here)										

TYSP Year	2023
Staff's Data Request #	1
Question No.	30

This question is not apllicable 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)
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
Notes							
(Include Notes Here)							

TYSP Year	2023
Staff's Data Request #	1
Question No.	31

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

Year	Annual Isolated Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Annual Isolated Expected Unserved Energy (MWh)	Annual Assisted Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Annual Assisted Expected Unserved Energy (MWh)
2023						
2024						
2025						
2026						
2027	OUC does not develop projections for either Annual Isolated or Annual Assisted Loss of Load Probability nor Expected Unserved Energy.					
2028						
2029						
2030						
2031						
2032						

TYSP Year 2023
Staff's Data Request # 1
Question No. 32

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	13.3%	6.6%	6.0%	3.0%	89.1%	90.6%	10,732	10,700
Stanton Energy Center	2	8.2%	6.6%	2.4%	3.0%	86.4%	90.6%	10,324	10,200
Stanton Energy Center	B	5.5%	3.8%	0.1%	3.0%	83.3%	93.3%	7,469	7,246
Indian River	A	2.8%	1.9%	0.0%	1.0%	97.2%	97.1%	N/A	13,735
Indian River	B	2.8%	1.9%	0.0%	1.0%	97.2%	97.1%	N/A	13,995
Indian River	C	3.8%	1.9%	0.6%	2.0%	95.1%	96.1%	N/A	17,158
Indian River	D	3.2%	1.9%	0.0%	2.0%	88.6%	96.1%	N/A	16,527
Osceola Generating Station	1	N/A	2.0%	N/A	2.0%	N/A	96.0%	N/A	11,400
Osceola Generating Station	2	N/A	2.0%	N/A	2.0%	N/A	96.0%	N/A	11,400
Osceola Generating Station	3	N/A	2.0%	N/A	2.0%	N/A	96.0%	N/A	11,400

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

TYSP Year 2023
Staff's Data Request # 1
Question No. 33

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Indian River	A	Brevard	GT	NG	06	89	16[1]	18[1]	16[1]	18[1]	16[1]	18[1]	See Note (7)
Indian River	B	Brevard	GT	NG	07	89	16[1]	18[1]	16[1]	18[1]	16[1]	18[1]	See Note (7)
Indian River	C	Brevard	GT	NG	08	92	83[2]	88[2]	83[2]	88[2]	83[2]	88[2]	See Note (7)
Indian River	D	Brevard	GT	NG	10	92	83[2]	88[2]	83[2]	88[2]	83[2]	88[2]	See Note (7)
Stanton Energy Center	1	Orange	ST	BIT	07	87	329[3]	329[3]	311[3]	311[3]	311[3]	311[3]	See Note (7)
Stanton Energy Center	2	Orange	ST	BIT	06	96	371[4]	371[4]	352[4]	352[4]	352[4]	352[4]	See Note (7)
Stanton Energy Center	A	Orange	CC	NG	10	01	184[5]	189[5]	184[5]	189[5]	184[5]	189[5]	See Note (7)
Stanton Energy Center	B	Orange	CC	NG	02	10	298	313	292	307	292	307	See Note (7)
St. Lucie[6]	2	St. Lucie	NP	UR	06	83	60	62	60	62	60	62	See Note (7)
Osceola Generating Station[8]	1	Osceola	GT	NG	12	01	197	197	157	157	157	157	See Note (7)
Osceola Generating Station[8]	1	Osceola	GT	NG	12	01	197	197	157	157	157	157	See Note (7)
Osceola Generating Station[8]	1	St. Lucie	NP	UR	06	02	186	186	157	157	157	157	See Note (7)

Notes

(1)Reflects an 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 71.6 percent and St. Cloud entitlement of 3.4 percent.
(5)Reflects an OUC ownership share of 28.0 percent.
(6)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.
(7) OUC considers capacity factor information to be confidential and therefore is not reporting it.
(8) Osceola Generating Station Unit 2 is currently able to provide power to OUC, while Unit 1 and Unit 3 are currently not able to provide power to OUC. Unit 1 and Unit 3 are anticipated to be able to provide power to OUC beginning in the summer of 2025.

TYSP Year	2023
Staff's Data Request #	1
Question No.	34

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

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Notes													
(Include Notes Here)													

TYSP Year 2023
Staff's Data Request # 1
Question No. 35

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		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)	8	Orange	Solar	SUN	Various	Various	0.36	0.36	0.36	0.36	0.36	0.36	See Note (2)

Notes

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

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

TYSP Year	2023
Staff's Data Request #	1
Question No.	36

OUC does not have any utility-owned renewable generation resource planned for in-service during the 2023 through 2032 planning period.

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Notes													
(Include Notes Here)													

TYSP Year	2023
Staff's Data Request #	1
Question No.	46

Nominal, Firm Purchases

Year		Firm Purchases $/MWh	Escalation %
HISTORY:			
	2020		
	2021		
	2022		
FORECAST:			
	2023	OUC does not have any firm purchases for which it can report data. Costs of landfill gas PPAs and Stanton Energy Center A PPA are considered confidential.	
	2024		
	2025		
	2026		
	2027		
	2028		
	2029		
	2030		
	2031		
	2032		

TYSP Year 2023
Staff's Data Request # 1
Question No. 47

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

TYSP Year	2023
Staff's Data Request #	1
Question No.	48

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
Notes													
(Include Notes Here)													

TYSP Year 2023
Staff's Data Request # 1
Question No. 49

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Duke Energy	Stanton Solar Farm	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	5.1	5.1	0	0	11/11	11/31
GES Port Charlotte	Port Charlotte	N/A	Charlotte	Landfill Gas	LFG	See Note (1)	See Note (1)	2.56	2.56	2.56	2.56	11/11	11/31
ESA Renewables	Fleet Solar Project	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	0.335	0.335	0	0	11/12	11/37
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
Greenwood Sustainable Infrastructure	Ksionek Stanton Solar	N/A	Orange	Solar	SUN	See Note (1)	See Note (1)	9	9	0	0	09/17	08/37
Sims Energy	JED LFGTE Project	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)	37	37	0	0	06/20	06/40

Notes

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

TYSP Year 2023
Staff's Data Request # 1
Question No. 50

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	12/24	12/44
NextEra	Harmony II	N/A	Osceola	Solar	Sun	See Note (1)	See Note (1)	74.5	74.5	0	0	12/24	12/44
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	74.5	0	06/27	06/46
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	74.5	0	06/29	06/49
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	74.5	0	06/30	06/50
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	74.5	0	06/31	06/51
TBD	TBD	N/A	TBD	Solar	Sun	See Note (1)	See Note (1)	149	149	74.5	0	06/32	06/52
TBD	TBD	N/A	TBD	Energy Storage	Sun	See Note (1)	See Note (1)	100	100	100	100	06/27	06/47
TBD	TBD	N/A	TBD	Energy Storage	Sun	See Note (1)	See Note (1)	100	100	100	100	06/31	06/51
TBD	TBD	N/A	TBD	Energy Storage	Sun	See Note (1)	See Note (1)	150	150	150	150	06/32	06/52

Notes

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

(2) Net Capacity represents nameplate capacity.

(3) Contracted Firm Capacity represents capacity anticipated to be available at time of seasonal peak demand.

TYSP Year 2023
Staff's Data Request # 1
Question No. 52

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
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[(2)]	25[(2)]	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[(2)]	17[(2)]	1/26	12/26
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)	25[(2)]	18[(2)]	01/21	12/30
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[(2)]	6[(2)]	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[(2)]	125[(2)]	04/21	12/24

Notes

(1) Gross Capacity and Net Capacity are not reported as OUC treats each of the sales as firm contracted capacity.
(2) Capacity may vary by year; values shown represent projections for 2023.

TYSP Year	2023
Staff's Data Request #	1
Question No.	53

OUC does not have any planned power sale agreements pursuant to which energy will begin to be delivered from OUC to a third-party during the current planning period.

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
(Include Notes Here)													

TYSP Year	2023
Staff's Data Request #	1
Question No.	55

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Utility - Firm											
Utility - Non-Firm											
Utility - Co-Firing	21	23	23	23	23	23	23	23	23	23	23
Purchase - Firm											
Purchase - Non-Firm	325	581	613	1,015	1,043	1,449	1,479	1,908	2,342	2,787	3,175
Purchase - Co-Firing											
Customer - Owned	109	164	219	305	392	507	623	751	879	970	1,060
Total											
Notes											
"Purchase – Non-Firm" includes energy from solar PPAs, given the variable nature of energy from solar.											

TYSP Year 2023
Staff's Data Request # 1
Question No. 64

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
Gardenia Flow Battery	Y	05/20	0.04	0.08	75%
Gardenia Fly Wheels	Y	05/22	0.016	0.064	Varies

Notes

(Include Notes Here)

TYSP Year	2023
Staff's Data Request #	1
Question No.	65

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	12/23	4	8	89%

Notes

(Include Notes Here)

TYSP Year	2023
Staff's Data Request #	1
Question No.	38

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	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
	2021			
	2022			
Projected	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
	2031			
	2032			
Notes				
(Include Notes Here)				

TYSP Year	2023	OUC does not have any planned traditional units with an in-service date within the current planning period
Staff's Data Request #	1	
Question No.	39	

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

TYSP Year 2023
Staff's Data Request # 1
Question No. 41

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

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Notes														
(Include Notes Here)														

TYSP Year 2023
Staff's Data Request # 1
Question No. 43

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

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

TYSP Year	2023
Staff's Data Request #	1
Question No.	44

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Stnaton Energy Center Unit 2	BIT	352	11/2027	NG	None identified
Notes					
Reflects an OUC ownership share of 71.7 percent and St. Cloud entitlement of 3.4 percent of Stanton 2.					

TYSP Year 2023
Staff's Data Request # 1
Question No. 45

OUC does not have any proposed transmission lines in the planning period that require certification under the Transmission Line Siting Act. Certification for one transmission line that is not yet in service has been received, as sumamrized below.

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
St. Cloud East - Magnolia Ranch	**> 15 Miles**	**230**	**06/2020**		**2025**
Notes					
(Include Notes Here)					

TYSP Year 2023
Staff's Data Request # 1
Question No. 71

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

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

TYSP Year 2023
Staff's Data Request # 1
Question No. 73

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	311 (1)	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	352 (2)	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 2023
Staff's Data Request # 1
Question No. 74

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	311 (1)	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	352 (2)	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

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 2023
Staff's Data Request # 1
Question No. 75

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	311 (1)	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
Stanton 2	ST	BIT	352 (2)	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

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 2023
Staff's Data Request # 1
Question No. 77

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil		Hydrogen	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2013	569	See Note (1)	3,030	See Note (1)	3,376	See Note (1)	0	See Note (1)	0	See Note (1)	0	N/A
	2014	472		3,534		3,405		0		1		0	
	2015	461		3,157		3,475		0		0		0	
	2016	464		3,464		3,903		0		0		0	
	2017	467		3,955		3,326		0		0		0	
	2018	470		4,204		3,422		0		0		0	
	2019	449		3,614		3,554		0		0		0	
	2020	500		2,778		4,090		0		0		0	
	2021	464		3,152		3,583		0		0		0	
	2022	487		1,978		4,953		0		0		0	
Projected	2023	597		2,351		4,129		0		0		0	
	2024	576		2,448		4,225		0		0		0	
	2025	593		2,542		3,853		0		0		0	
	2026	592		1,762		4,363		0		0		0	
	2027	567		1,652		4,056		0		0		0	
	2028	588		0		5,695		0		0		0	
	2029	592		0		5,351		0		0		0	
	2030	556		0		5,035		0		0		0	
	2031	586		0		4,546		0		0		0	
	2032	590		0		4,289		0		0		0	

Notes

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