



May 1, 2023

Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Attn: Adam Teitzman

Re: 2023 Ten Year Site Plan – Staff’s Data Request #1

Dear Mr. Teitzman,

Pursuant to Section 186.801, Florida Statutes and Rules 25-22.070-072 of Florida Administrative Code, Lakeland Electric submits its responses to Staff’s Data Request #1, in relation to Lakeland Electric’s 2023 Ten Year Site Plan via the Commissions electronic platform.

If you have questions please contact me at 863-834-6595.

Sincerely,

/s/Cynthia Clemmons

Cynthia Clemmons
City of Lakeland
Manager of Legislative and Regulatory Relations
Lakeland Electric
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Enclosure

Instructions: Accompanying this data request is a Microsoft Excel (Excel) document titled “Data Request #1.Excel Tables,” (Excel Tables File). For each question below that references the Excel Tables File, please complete the table and provide, in Excel Format, all data requested for those sheet(s)/tab(s) identified in parenthesis.

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.

Submitted on April 1, 2023.

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

Submitted on April 1, 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.

Attached in Excel File. Also, the data are presented in Chapter 5 “Forecasting Methods and Procedures” of the recently submitted TYSP 2023 to FL PSC.

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).

Not applicable to LE.

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.

Excel File attached.

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.

We use nine (9) Davis Instrument WeatherLink stations located at substations throughout the Lakeland Electric service area. On a monthly basis, the hourly data from the weather stations are loaded into an Excel workbook for validation using descriptive statistics and line graphs. If there are any errors or outliers, these are eliminated. The average of the validated temperatures is stored in a data bank and used for various reports including the monthly Peak Report.

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.

Methodology and assumptions

- Lakeland explains the methodology and assumptions used to develop the load and demand forecast in Section 3.0 "Forecast of Electrical Power Demand and Energy Consumption" of the 2023 TYSP.

Data Sources

- Lakeland's own weather stations
- Customer Billing System Data
- SCADA Hourly Load Data/Solar
- Census Data

Third Party Consultants

- Moody's Analytics for demographic/economic projections
- Woods and Poole for demographic/economic projections
- Bureau of Business and Economic Research for demographic projections
- Itron's Energy Forecasting Group for appliance indices
- Itron's expertise for forecast review

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.

There are none currently.

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.

Lakeland generates a new load forecast every year. As part of the forecasting process, the forecast accuracy of the previous forecast is evaluated. Sales and peak values are weather normalized and forecast variance is assessed relative to actual values as well as relative to weather normalized values in order to determine underlying trends.

Previously Lakeland maintained annual forecast error fans aggregated by fiscal year (Fiscal Year = Oct 1st through Sept 30th). Error fans were created for population (vs customers), sales, summer peak and winter peak and are available for the late 1990s fiscal year through to 2009 fiscal year. This file was already submitted to PSC in 2020 as part of that year's data request.

Most recently, Lakeland has updated its forecast error fans to match the Calendar Year Ten Year Site Plan data back to 2008. Spreadsheet titled LAK2023TYSP_SUP_ErrorFans.xlsx contains both actual and weather normalized values where applicable. Data goes back to 2008 and has been updated with 2022 actuals.

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

Please see response to question 9 a.

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

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.

In recent years, the Lakeland Winter Haven MSA (Polk County) has seen a boom in e-commerce warehouse development thanks to its central location. Notably, Amazon moved its airhub from Tampa to Lakeland in the summer of 2020 and is continuing to expand. Florida in general benefited from the work from home trend accelerated by COVID and Lakeland was no exception. As a result Lakeland Electric experienced 2.2% total customer growth in 2022.

Industrial customer grew 4.8% in 2022. Commercial rate class grew in 2022 at 1.1%.

	Residential	Commercial	Industrial	Total
2013-2022 AAGR	1.4%	1.2%	-1.0%	1.3%
2023-2032 AAGR	1.2%	1.2%	1.2%	1.2%

Our customer forecast uses Moody’s analytics and also cross references locally produced forecasts from the Bureau of Economic and Business Research associated with the University of Florida.

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.

Lakeland uses Itron Energy Forecasting Group data on Appliance Indices and Building characteristics which is derived from U.S. Energy Information Administration (EIA) research published in its 2021 Annual Energy Outlook (AEO). Lakeland uses the Southeast Census division data and contracts with Itron to adjust the indices based on Lakeland’s mix of residential and commercial building types. The EIA projections incorporate expected changes in appliance energy efficiency due to codes and standards as well as general advances in technology.

Residential Average use has been declining in the Lakeland Service area and is expected to continue to decline. The main factors in the decline are increased appliance energy efficiency, improved building shell insulation, changes in residential building type mix.

Commercial Average use has also been declining it is expected to continue to do so according to EIA projections used in our models. Main contributors to the historical decline are lighting upgrades, appliance energy efficiency as well as the use of energy management systems.

Lakeland is forecasting a flattening of Industrial average use mainly because a small number of customers are projected to get added to that rate class and those that do get added are expected to be mostly in the small Industrial category (billing demand between 500 KW and 1,000 KW).

	Residential	Commercial	Industrial
2013-2022 AAGR	2.1%	1.6%	1.9%
2023-2032 AAGR	0.8%	0.7%	0.4%

- 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.

As discussed in previous section, average use is declining or flat for all three main rate classes. At this time, Net Energy for Load is expected to grow in the 10 year forecast horizon by 0.6 % a year. This is because positive customer growth rates are expected to compensate for average use declines. Lakeland assumes impact of conservation programs are already in the energy sales history and does not make any additional assumptions regarding their impact.

- 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).

LE’s energy conservation demand savings is very low i.e., less than 2 MW. Hence the effect is very minimal at this moment.

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.

Self Service – Cogeneration non solar

Since Lakeland Electric rates are among the lowest in the state, it is not expected that it would be cost effective for a customer to self serve. No non solar cogeneration is assumed in the models.

Self Service – Solar photovoltaic

Lakeland tracks solar photovoltaic installations and generates a net metered forecast. Due to our low electric rates and rate structure, growth of self service solar has been minimal and is expected to continue to be minimal and have limited impact on demand.

- 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.

Lakeland does not currently have a demand response program in place and no assumptions are made in the forecast regarding demand response.

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

Lakeland used to be winter peaking in the past. Lakeland’s all-time annual peak was 804 MW in winter 2010. In recent years, Lakeland has experienced several mild winter seasons. Nonetheless, when Lakeland experiences a cold winter, the peak typically surpasses the summer peak. It is expected that Lakeland will remain summer peaking in the 10 year forecast horizon. But there will be few years winter peak will surpass summer peaks when extreme winter conditions prevail.

Summer peaks in Lakeland are less volatile than winter peaks and have been growing at a slightly faster pace, on a weather normalized basis. Factors contributing to the total demand growth rate are same factors discussed in response to question 11 c.

- 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.

Since no reductions are made for Load Management and Conservation, Net Firm Demand is the same as Total Demand. Please see response to question 12 C.

- 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.

Not applicable.

- 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.
 - 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.

IRA provisions are not reflected in utility’s load forecast because LE has not been able to come up with any strategy/program for the DSM and Conservation plan and initiate the conservation effort within a short period of time after IRA became law in 2022.

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:
- Summer Peak Demand.
 - Winter Peak Demand.
 - Annual Retail Energy Sales.

A review of Lakeland's summer and winter peak demand for the ten years prior to the current planning period do not reveal any anomalies caused by non-weather events.

While pandemic did cause a shift in Residential and Commercial consumption, overall total demand was minimally impacted.

16. Please provide responses to the following questions regarding the weather factors considered in the Company's retail energy sales and peak demand forecasts:
- 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.
 - Please specify the source(s) of the weather data used in the aforementioned forecasting models.
 - 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.
 - Please specify with corresponding explanations:
 - How many years' historical weather data was used in developing each retail energy sales and peak demand model.
 - How many years' historical weather data was used in the process of these models' calibration and/or validation.
 - 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.

Please refer to section 3 of the Lakeland Ten Year Site Plan, under Weather Variables header, for response to questions below.

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:
- Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.
 - Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
 - Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
 - Schedule 3.1 - History and Forecast of Summer Peak Demand.
 - Schedule 3.2 - History and Forecast of Winter Peak Demand.
 - 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.

Not applicable to LE.

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.

COVID had a minimal impact on total energy sales as increased Residential sales compensated from decreased Commercial and Industrial Sales

- 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.

Our models incorporated a COVID variable into the forecast with the assumption that COVID would have an impact on Residential and Commercial models that would diminish over time.

We do not currently break down this model by class. The total net metered generation that is subtracted out is as follows:

Year	Net Metered Solar Forecast (MWh)
2022	3,064
2023	3,519
2024	4,033
2025	4,414
2026	4,814
2027	5,208
2028	5,620
2029	6,002
2030	6,397
2031	6,796
2032	7,213

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.

With the 2023 TYSP, we adjusted our forecast to subtract out projected customer owned solar generation from total sales.

- 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.

We do not currently break down this model by class. The total net metered generation that is subtracted out is as follows:

Year	Net Metered Solar Forecast (MWh)
2022	3,064
2023	3,519
2024	4,033
2025	4,414
2026	4,814
2027	5,208
2028	5,620
2029	6,002
2030	6,397
2031	6,796
2032	7,213

- 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.

Our forecast currently does not separate between residential and commercial solar. Combined projections are below.

Year	Total Customer Solar
2023	940
2024	1073
2025	1179
2026	1285
2027	1391
2028	1497
2029	1603
2030	1709
2031	1815
2032	1921

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?

Lakeland Electric included PEV loads in the demand and energy forecast for the current planning period TYSP. We used a load profile provided by Itron consultants (and verified with our known EV customer hourly loads) that assumed no incentives for charging. We estimated the number of electric vehicles in our service area based on DMV data for Polk County and made projections based on historical trends and expected saturation rates for Electric Vehicles. The EV forecast was added to the total sales forecast. We scaled the hourly EV load profile to estimate the projected impact at time of peak demand.

- 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.

We have not included the impact of demand response or time of uses rates for 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.

There are no changes to Lakeland Electric's PEV growth drivers since 2022.

- 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.

Methods and assumptions are the same compared to the 2022 survey.

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

Lakeland Electric's PEV public charging installation monitoring remains the same compared to 2022.

- 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.

These processes remain the same compared to 2022.

- 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.

No distribution upgrades have been required.

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.

- 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

There have been no significant events or announcements.

- 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.

The IRA has not impacted the PEV and PEV charging adoption and therefore has also not become a factor in the PEV energy or demand forecasts.

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.

Customer facing website has incentives and rebates available for both new and used vehicle purchases. Customer incentives and rebates are also available for charging infrastructure.

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

Not at this time, ideation around customer engagement and education is being explored

- 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.

No, but always open to customer input. Customer facing website has incentives and rebates available, our energy advisor team can go on-site to answer customer questions.

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.

No research around demographics or regional factors has occurred.

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.

Without the states Infrastructure Plan Development, growth would be slower than 3% share of sales growth rate noticed by SACE and Atlas public policy's recent report.

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

The actual and forecasted demand has not seen a significant impact. estimate less than .1%

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.

N/A

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.
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.
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.
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.

Excel Table on LOLP is attached.

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.

Attached in Excel Spreadsheet.

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.

Attached in Excel Spreadsheet.

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.

Attached in Excel Spreadsheet.

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

The underground cabling work has been complete and building structures will start in summer 2023. Construction materials have been received and LE is expecting to receive a Generation Step Up (GSU) transformer in this summer.

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.

LE does not own existing Renewable (solar projects). However, LE has a long term PPA with four different solar companies of total 14 MWac.

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.

LE is looking at various solar projects from PPA to own investment. But no project has been finalized yet to provide any narrative information at this time.

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?

LE's 16 MW Solar PPA project planned for 2024 in McIntosh is on hold because of increased cost of the project due to supply-chain issues after the Pandemic.

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.

Not Applicable to LE.

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.

There is no planned PPSA in this planning period.

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.

The planned RICE units have already been decided to be built and the construction is in progress. The construction is expected to be complete in the third quarter of 2024.

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.

The Table is attached in Excel Spreadsheet.

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.

Not applicable.

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.

There is no unit planned to convert into CC from Steam Unit during this planning period. There is no existing Steam Unit in LE's portfolio.

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.

This is not applicable to LE.

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.

The information is provided in attached Spreadsheet. But this transmission line project does not require certification under the Transmission Siting Act. This approved project is planned to be completed in August 2024.

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.

The excel Table is attached.

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.

The excel Table is attached.

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.

There is no planned PPA planned at this time to be delivered.

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.

The excel Table is attached in Tab 49.

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.

The Summary Table is provided in the Spreadsheet (Tab 55). All the existing projects are in operation.

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?

LE's 16 MW Solar PPA project planned for 2024 in McIntosh Site is on hold because of increased cost of the project due to supply-chain issues after the Pandemic.

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.

Not applicable.

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.

Not applicable.

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?

Not applicable to LE.

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.

Attached in Excel Spreadsheet.

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

Net- metering: LE allows LE customers who want to connect their renewable generation system such as roof top solar panels to the LE's electric grid in a net-meter fashion. LE has expanded the solar interconnection agreement to track the battery installed from its customers to provide battery rebates in its service territory.

Solar Water Heating program: This program under the name "Solar for Lakeland" allows residential customers to install solar water heaters. All solar heating customers are metered for verifications and are tracked for green credits for the utility.

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.

Not applicable to LE.

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.

LE considers solar photovoltaic (PV) system as distributed generators irrespective of their connection to the grid. Solar being available mostly during the daytime, it contributes to reduce system peak demand/energy enhancing reliability in the Electric grid. LE considers the firm capacity value of solar as 50% of the nameplate capacity for LE's summer peak and 0% for winter peak. These are based on the minimum capacity factor of the historical solar output contributing to LE's system peaks in winter and summer.

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.

Many of our recent residential solar customers have included battery installations with their rooftop installation in hopes of truly leveraging the capital investment. We have added a section to solar interconnection agreement to track battery installs in our service territory (battery rebates).

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.

None, staying abreast of non-lithium battery storage technology development.

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.

N/A. Lakeland Electric does not have utility scale energy storage facilities.

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).

Still determining actual business and use cases for batteries, among that development the determination of location of batteries will be considered.

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.

Many of our recent residential solar customers have included battery installations with their rooftop installation in hopes of truly leveraging the capital investment. We have added a section to solar interconnection agreement to track battery installs in our service territory. (battery rebates)

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.

Excel Table is attached.

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.

Excel Spreadsheet attached.

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.

None

- b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the current planning period.

We have not assessed any potential changes on the existing pilot program.

- c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

We do not have any anticipated new plans for the energy storage program.

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.

LE utilizes 50% of solar installed capacity as firm resources in its portfolio during summer. But we have no storage technologies in the Portfolio yet.

- 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.

LE does not have much experience on storage technologies. But based upon the discharge duration of storage technologies, they can firm up the solar capacity during the peak hours when LE needed the capacity and energy most, esp. during peak load hours. Since peak loads for Lakeland Electric remains high (>90% of peak load) about 4 hours, probably storage hours of at least 4 hours will contribute to run the system reliably.

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.

Lakeland Electric stays abreast of research and development for utility power technologies by connecting with industry professionals and other utilities initiatives.

Environmental

69. Please explain if the Company assumes carbon dioxide (CO₂) compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative, 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.

LE assumes no carbon dioxide compliance costs in its resource planning process to generate 10 years resource plan in its TYSP.

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.

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.

The Cooling Water Intake Structures Rule (CWIS) affects units that use surface water for cooling purposes. One of our units is affected by this rule – Unit 8. Due to Unit 8 exceeding a capacity factor of 8%, Lakeland is required to endeavor an intensive ecological study. At the end of the study, it is quite likely the intake structures will need to be reconfigured to meet the stricter standards as determined by the Florida Department of Environmental Protection. The reconfigured intake structures are estimated to be about a million dollars. One alternative to reconfiguring the intake structures is to operate the unit in a simple cycle which would eliminate the need for the cooling water intake but reduce the electrical output of the unit.

The Coal Combustion Residuals (CCR) rule took effect in 2015 by regulating the storage of coal combustion byproducts. Lakeland Electric stores only dry byproducts onsite. The regulations required additional monitoring of the groundwater around the byproduct storage site. Small, localized groundwater impacts have been determined and delineated. However, there are no off-site impacts. With the retirement of Unit 3 Coal unit, the landfill is being prepared for permanent closure with an impermeable cap. The cap will eliminate rainwater from entering the landfill, which will help control the source material.

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?

No. Lakeland Electric does not have any generating units subject to the NSPS GHG rule. We are currently in the process of adding new generation in the form of six natural gas-

powered Reciprocating Internal Combustion Engines (RICE), each rated at ~20 MW, but these units will be exempt from the NSPS GHG rule due to their size, unit type, and construction date.

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

N/A

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

N/A

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

N/A

- 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.

See attached Excel file, tab "Emissions Cost."

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

N/A

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.

No reliability impact expected. Our only unit subject to MATS was the coal-fired Unit 3. This unit was permanently shut down and officially retired on April 4, 2021.

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

No reliability impact expected – Florida is not subject to CSAPR.

- c. Cooling Water Intake Structures (CWIS) Rule.

Larsen Unit 8 CC may be impacted. Additional environmental studies will need to be completed. If state regulators review the studies and determine we must comply with each provision of the rule, a decision would be needed whether to invest in significant capital expenses or to limit the Unit to simple cycle operation. It is possible that the results of the studies and negotiations with regulators bring about very little changes to Unit 8.

d. Coal Combustion Residuals (CCR) Rule.

No reliability impact is expected.

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

No reliability impact is expected.

f. Affordable Clean Energy Rule or its replacement.

No reliability impact expected from the ACE rule. Too early to know whether there will be any impacts from the ACE rule replacement.

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

No reliability impact is expected as we are no longer subject to the rule due to the retirement of Unit 3.

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.

See attached Excel file, tab "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.

See attached Excel file, tab "EPA Cost Effects."

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.

See attached Excel file, tab "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.

Not aware of any such approved costs for environmental compliance investments.

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.

Excel Table Attached.

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

Lakeland Electric uses a hybrid method to determine fuel price forecasts for analysis purposes and reports. Various independent forecasts from respected energy sector trade publications are used to develop a weighted price. Our analysis incorporates the U.S. Energy Information Administration (EIA) outlook. We examine the basis differential for the Florida market zone 3 and use the NYMEX Henry Hub futures market as a benchmark. These are industry standard practices followed in the preparation of long-range forecasts.

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

Lakeland Electric ceased production from its coal plant on April 4th, 2021. The plant was decommissioned and subsequently razed. While coal prices are beneath the levels they reached in 2022, prices are still above the previous 5-year average. Prices are likely to remain strong due to demand in Europe and China.

b. Natural Gas

Natural gas prices are considerably lower than their 2022 levels. The main driver has been the weather, as this winter season has been extremely mild, with fewer heating degree days. The Freeport LNG terminal being closed left more domestic supply available. The withdrawal season inventory has remained greater than the five-year average and the previous year. The fuel price has dropped as the market has abundant supply compared to the current demand.

c. Nuclear

Not applicable to Lakeland Electric portfolio.

d. Fuel Oil

The U.S. Energy Information Administration (EIA) Short-Term Energy Outlook is projecting prices to fall in 2023 and 2024 mainly because of expecting global oil production to outpace consumption. The Saudis/OPEC recent supply cut could change events, driving prices upwards in 2024.

e. Other (please specify each, if any)

Not applicable.

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

a. Natural Gas - Lakeland Electric predicted a 2022 average natural gas price of \$4.15 per MMBtu. Due to unusually high natural gas prices for much of the year, the average calendar year was \$7.39 per MMBtu.

b. Coal – Not applicable.

c. Distillate Oil – Lakeland Electric predicted a 2022 average distillate oil price of \$13.57 per MMBtu. The true price was an average of \$18.39. This reflects the higher oil prices that were experienced nationally during 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.

Lakeland Electric continues using best utility practices to develop rates using third-party subscriptions. We have included forecasting basis differential for Florida Gas Zone 3 into our prices due to the high volatility experienced in the calendar year 2022. We model various low, medium, and high scenarios to determine what we believe to be the best projection possible.

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

Lakeland Electric has long-term transportation contracts in place with three (3) separate pipeline companies, Florida Gas Transmission Company (FGT), Transco, and Gulfstream Pipeline. Owning pipeline transportation contracts provides the shipper firm rights on nominations made on the pipeline, which is the most secure means for delivering natural to our plants. Additional capacity on FGT was purchased to secure more firm transportation rights to meet our peaks and load growth.

Lakeland Electric maintains agreements with multiple suppliers to allow for diversity of daily, and monthly baseload supply. LE also has long-term prepaid agreements that offer larger discounts from the indexes and secured supply availability.

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.

Lakeland Electric is unaware of any pipeline expansion projects impacting our ratepayers during 2023.

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.

The LNG industry has expanded its export capacity, creating a significant basis premium to the Florida Gas Zone 3 index over the Henry hub price not experienced before 2022. The Florida market competes with LNG export prices to ensure domestic supply availability.

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

Lakeland Electric does not have plans to utilize natural gas storage at this time. We are able to use the imbalance on our two pipelines as temporary storage.

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.

Coal transportation is no longer necessary for our utility due to our coal plant's closure. Any impacts on the utility will be indirect.

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.

Coal matters no longer directly impact our utility due to our coal plant's closure.

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.

This is not applicable to Lakeland Electric.

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

This is not applicable to Lakeland Electric.

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

Not applicable to Lakeland Electric.

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.

Heat Trace System check outs before winter/cold weather season. We have Pre-Extreme Winter Checklist to be completed by Operations & Crafts by December 1. Also, each Plant has its own Extreme Winter Weather Equipment Checklist that also should be completed by December 1st. When colder weather is forecasted, we also perform walkdowns of major systems (gas, cycle make-up, condensate, feedwater, and ammonia, etc.) to insure their protection. This year we also purchased additional 120V and 480V portable heaters.

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

Repairing heat trace circuits during the Summer.

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

The Power Plants maintain zero discharge pond levels to ensure adequate free board exists for storms. Being inland, Lakeland does not have the coastal flooding concern.

All Lakeland Electric power plant sites and substations are located outside of FEMA flood zones. Therefore, no flood mitigation planning is performed.

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.
- 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.

Lakeland Electric lost about 64,000 customers from Hurricane Ian. About 60% of the customers were restored on the first day of restoration work. All LE's main line feeders and substations were restored to full capacity by the evening of Sep 29, 2002. By October 4, all customers were restored, and Energy Production and Transmission and Distribution operations

remained normal. LE started dropping its load from Sep 27 onwards, and LE's system load dropped by about 50% on 29th after the hurricane passed by Lakeland.

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

The impact was modeled based on the weather only i.e., temperature, humidity and expected precipitation.

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

Lakeland Electric's day ahead load forecast was based on the low temperature and high level of precipitation during the storm because of expected torrential rain. But the impact of outage on customers were not modeled. The Day Ahead (Sep 29th) load forecast was 350 MW, but actual load was 300 MW due to the combined effect of forced outage on line feeders and weather.

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.

Production now reviews our Winter Readiness Plan for all sites annually. We bought a new HMI for the Heat Trace System. This year we also purchased additional 120V and 480V portable heaters.

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TYSP 2023 Suppl. Excel TablesI

Financial Assumptions			
Base Case			
AFUDC RATE		4.5	%
CAPITALIZATION RATIOS:			
	DEBT	52.5	%
	PREFERRED		%
	NET POSITION*	47.5	%
RATE OF RETURN			
	DEBT	5	%
	PREFERRED	N/A	%
	EQUITY	N/A	%
INCOME TAX RATE:			
	STATE	0	%
	FEDERAL	0	%
	EFFECTIVE	0	%
OTHER TAX RATE:		0	%
DISCOUNT RATE:		5	%
TAX			
DEPRECIATION RATE:		2.8	%

TYSP 2023 Suppl. Excel TablesI

Financial Escalation Assumptions				
	General	Plant Construction	Fixed O&M	Variable O&M
	Inflation	Cost	Cost	Cost
Year	%	%	%	%
2023	3.3	3.3	3.3	3.3
2024	2.3	2.3	2.3	2.3
2025	2.1	2.1	2.1	2.1
2026	2.1	2.1	2.1	2.1
2027	2.1	2.1	2.1	2.1
2028	2.1	2.1	2.1	2.1
2029	2.2	2.2	2.2	2.2
2030	2.3	2.3	2.3	2.3
2031	2.4	2.4	2.4	2.4
2032	2.4	2.4	2.4	2.4

Doc	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		
11/2/2022	360	357	356	355	353	352	351	350	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349		
12/2/2022	349	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348		
13/2/2022	245	234	229	228	214	256	289	303	304	307	310	313	317	321	324	326	329	332	346	340	325	305	281	258		
14/2/2022	246	235	230	229	215	257	290	304	305	308	310	313	317	321	324	326	329	332	346	340	325	305	281	258		
15/2/2022	321	311	309	312	324	335	402	442	467	491	507	510	508	503	493	489	498	528	579	589	588	571	516	504		
16/2/2022	447	450	456	472	499	555	652	658	664	663	657	659	670	678	679	678	678	678	678	678	678	678	678	678		
17/2/2022	424	426	435	446	471	524	595	600	579	524	466	414	383	368	352	348	351	371	407	415	409	397	374	356		
18/2/2022	325	316	317	318	325	339	355	370	371	371	371	371	371	371	371	371	371	371	371	371	371	371	371	371		
19/2/2022	322	319	319	325	336	357	388	426	464	474	463	438	410	387	371	366	376	413	483	508	521	520	501	485		
20/2/2022	466	471	479	494	522	577	650	667	635	573	510	451	408	382	367	361	367	388	440	450	448	431	402	384		
21/2/2022	369	368	370	377	392	439	506	527	506	466	424	388	369	355	344	340	345	362	393	398	394	381	362	344		
22/2/2022	309	303	302	304	315	342	390	392	382	368	354	342	335	331	328	328	331	339	359	356	345	327	306	285		
23/2/2022	259	268	243	247	237	230	202	115	115	118	121	126	134	137	140	143	145	147	160	151	136	115	290	267		
24/2/2022	254	242	235	234	229	261	293	307	309	316	324	332	341	348	352	355	356	357	369	366	345	323	297	272		
25/2/2022	260	248	241	238	239	247	262	277	294	309	318	326	335	341	344	346	346	349	362	355	341	324	304	284		
26/2/2022	259	251	248	248	243	267	287	307	322	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328		
27/2/2022	289	294	282	286	297	322	358	376	378	377	366	355	344	334	327	323	326	337	364	368	364	353	336	320		
28/2/2022	286	279	277	278	298	314	351	368	366	344	315	323	317	314	314	312	316	324	343	348	329	311	290	269		
29/2/2022	244	234	230	229	226	256	299	292	285	265	244	230	222	220	219	219	219	219	219	219	219	219	219	219		
30/2/2022	280	274	273	278	290	321	366	390	397	398	391	383	372	362	353	352	360	381	426	439	439	425	397	380		
31/2/2022	327	322	320	320	323	333	359	394	403	385	343	325	316	312	310	311	313	318	335	328	314	294	271	249		
32/2/2022	261	253	250	250	256	270	291	311	327	333	330	325	320	315	311	309	308	313	327	353	357	353	341	329	314	
33/2/2022	291	284	282	282	288	300	321	337	346	344	335	325	320	315	311	310	312	324	346	346	338	325	310	294		
34/2/2022	267	267	264	266	265	267	266	267	266	268	269	270	270	270	270	270	270	270	270	270	270	270	270	270		
35/2/2022	279	268	262	262	270	295	333	352	359	369	378	385	391	396	397	397	401	410	438	433	416	392	368	344		
36/2/2022	308	303	303	308	332	353	400	435	442	437	424	404	388	376	366	364	367	372	394	447	460	461	447	418	394	
37/2/2022	462	461	462	469	481	423	489	509	488	449	409	380	363	349	340	338	342	357	366	389	384	370	350	332		
38/2/2022	291	284	281	282	289	303	315	348	358	348	334	322	313	310	308	308	310	313	317	333	326	312	292	268	246	
39/2/2022	249	229	224	221	223	231	245	259	273	279	260	252	244	234	229	229	230	242	297	312	306	294	276	260	241	
40/2/2022	247	238	233	232	236	247	265	282	295	302	302	302	299	297	294	292	296	297	305	315	324	315	295	272	249	
41/2/2022	246	236	232	231	238	261	295	308	307	306	305	305	305	307	309	311	314	318	314	328	315	296	272	250		
42/2/2022	252	247	244	244	248	262	282	290	290	290	291	292	293	293	293	293	293	293	293	293	293	293	293	293		
43/2/2022	253	248	246	246	246	250	264	285	294	293	292	291	290	291	292	294	297	302	303	303	309	311	304	292	279	265
44/2/2022	252	246	244	244	248	261	282	289	289	289	288	287	288	289	291	293	296	300	301	307	307	300	288	273	259	
45/2/2022	242	238	236	236	240	260	282	289	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	
46/2/2022	253	247	244	243	245	251	261	269	276	280	280	280	281	283	284	285	288	290	296	297	290	280	269	258		
47/2/2022	254	247	244	243	245	250	260	268	276	279	279	280	281	282	283	285	288	290	296	297	290	280	269	258		
48/2/2022	264	260	259	260	267	274	284	309	330	334	334	330	324	314	310	307	304	302	302	305	311	314	308	310	298	
49/2/2022	278	274	272	273	279	294	316	339	335	331	305	301	299	299	299	300	302	305	308	314	316	309	297	284	270	
50/2/2022	257	252	250	250	255	270	292	302	301	298	296	295	294	294	295	296	299	300	308	312	315	309	298	285	272	
51/2/2022	257	252	251	251	255	270	292	302	301	298	296	295	294	294	295	296	299	300	308	312	315	309	298	285	272	
52/2/2022	247	238	233	232	236	247	265	282	295	302	302	302	299	297	294	292	296	297	305	315	324	315	295	272	249	
53/2/2022	246	236	232	231	238	261	295	308	307	306	305	305	307	309	311	314	318	314	328	315	296	272	250			
54/2/2022	252	247	244	244	248	262	282	290	290	290	291	292	293	293	293	293	293	293	293	293	293	293	293	293		
55/2/2022	253	248	246	246	246	250	264	285	294	293	292	291	290	291	292	294	297	302	303	303	309	311	304	292	279	265
56/2/2022	252	246	244	244	248	261	282	289	289	289	288	287	288	289	291	293	296	300	301	307	307	300	288	273	259	
57/2/2022	242	238	236	236	240	260	282	289	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	
58/2/2022	253	247	244	243	245	251	261	269	276	280	280	280	281	283	284	285	288	290	296	297	290	280	269	258		
59/2/2022	254	247	244	243	245	250	260	268	276	279	279	280	281	282	283	285	288	290	296	297	290	280	269	258		
60/2/2022	264	260	259	260	267	274	284	309	330	334	334	330	324	314	310	307	304	302	302	305	311	314	308	310	298	
61/2/2022	278	274	272	273	279	294	316	339	335	331	305	301	299	299	299	300	302	305	308	314	316	309	297	284	270	
62/2/2022	257	252	250	250	255	270	292	302	301	298	296	295	294	294	295	296	299	300	308	312	315	309	298	285	272	
63/2/2022	247	238	233	232	236	247	265	282	295	302	302	302	299	297	294	292	296	297	305	315	324	315	295	272	249	
64/2/2022	246	236	232	231	238	261	295	308	307	306	305	305	307	309	311	314	318	314	328	315	296	272	250			
65/2/2022	252	247	244	244	248	262	282	290	290	290	291	292	293	293	293	293	293	293	293	293	293	293	293	293		
66/2/2022	253	248	246	246	246	250	264	285	294	293	292	291	290	291	292	294	297	302	303	303	309	311	304	292	279	265
67/2/2022	252	246	244	244	24																					

5/11/2022	262	255	237	227	211	257	299	318	340	371	405	439	469	485	497	505	509	506	496	479	471	441	387	333	
5/12/2022	291	264	246	236	219	264	306	325	353	392	436	474	500	522	542	557	567	566	553	531	517	494	447	386	
5/13/2022	330	298	277	264	245	288	336	366	400	438	480	516	543	566	584	597	587	584	563	541	528	504	464	402	
5/14/2022	345	313	286	268	241	285	336	367	401	440	482	518	545	568	586	599	589	586	565	544	529	507	468	392	
5/15/2022	351	315	291	273	255	294	340	370	405	442	479	504	524	536	542	543	537	521	500	489	471	451	421	369	
5/16/2022	329	296	275	261	242	282	328	354	382	412	445	475	495	505	512	521	524	522	515	502	485	477	451	399	345
5/17/2022	298	269	250	239	221	266	307	336	360	385	422	459	483	500	513	520	523	519	507	489	483	456	401	345	
5/18/2022	298	269	250	239	221	267	308	337	364	394	437	475	497	518	535	548	555	553	539	518	506	484	433	374	
5/19/2022	317	286	265	253	234	278	318	336	362	399	438	473	495	510	522	527	529	524	511	493	483	462	407	351	
5/20/2022	304	274	255	244	225	268	309	331	350	386	425	472	495	511	520	526	525	521	508	498	490	477	423	368	
5/21/2022	312	280	269	254	238	279	324	356	384	415	457	486	507	522	532	533	529	535	521	500	488	469	417	364	
5/22/2022	321	289	266	251	244	245	283	319	349	389	412	453	481	499	510	516	518	513	499	480	473	451	395	346	
5/23/2022	312	282	262	250	232	276	317	336	365	407	452	485	511	534	552	566	574	572	558	535	521	498	454	392	
5/24/2022	338	304	283	269	269	292	331	349	389	425	471	499	525	546	563	575	580	576	569	557	523	500	458	397	
5/25/2022	345	311	290	275	257	241	284	325	347	387	427	466	493	517	535	547	557	567	565	549	526	474	409	350	
5/26/2022	358	325	294	284	265	284	305	343	365	396	444	485	515	544	568	587	600	608	605	587	561	544	510	460	423
5/27/2022	371	334	310	294	293	314	350	369	404	453	492	523	551	574	594	606	613	608	591	565	548	522	483	428	
5/28/2022	374	336	309	296	281	278	303	354	413	465	494	521	542	567	594	615	625	619	599	575	551	502	483	400	386
5/29/2022	350	315	290	273	265	263	289	307	339	395	444	481	507	526	542	550	552	547	531	508	495	477	430	376	
5/30/2022	337	304	281	268	267	284	312	331	371	424	475	506	535	557	573	588	594	588	571	546	530	507	471	410	
5/31/2022	366	330	306	291	290	307	348	367	402	452	490	522	552	577	598	612	620	616	599	572	551	528	488	434	
6/1/2022	354	327	309	297	296	311	335	353	383	423	464	497	524	543	552	552	547	535	517	494	478	459	418	375	
6/2/2022	342	316	299	289	289	305	330	349	382	424	469	508	540	567	585	596	601	595	575	548	528	500	458	410	
6/3/2022	368	339	320	308	306	320	343	362	395	438	481	518	548	572	584	588	586	575	555	527	508	485	444	399	
6/4/2022	355	327	306	292	285	281	296	326	338	381	417	447	466	474	468	451	437	408	388	372	367	359	336	307	
6/5/2022	286	270	258	246	244	246	268	288	308	352	390	425	455	478	495	508	506	496	497	493	478	456	429	386	348
6/6/2022	316	295	277	268	250	270	313	330	372	415	450	482	505	525	530	530	526	523	509	495	479	452	408	359	320
6/7/2022	312	290	275	266	268	285	312	331	358	394	432	467	492	511	522	526	525	521	505	481	466	445	404	362	
6/8/2022	320	297	281	272	272	289	315	334	359	393	429	462	485	501	506	503	497	486	471	452	439	421	383	344	
6/9/2022	302	280	266	258	260	278	305	323	345	373	402	429	448	461	462	457	446	432	418	403	395	381	349	313	
6/10/2022	285	285	282	244	249	268	296	315	339	371	405	437	462	480	491	499	497	491	478	459	441	424	385	344	
6/11/2022	346	320	298	282	282	290	328	350	379	409	440	470	498	527	545	557	562	561	550	540	524	505	474	438	382
6/12/2022	293	272	257	249	245	245	248	267	291	311	355	395	432	462	483	497	506	509	505	490	468	451	432	395	357
6/13/2022	324	300	284	275	276	293	319	337	366	402	442	476	501	521	531	535	533	524	508	486	471	450	409	367	
6/14/2022	328	304	287	278	279	295	321	339	368	405	445	480	506	526	537	541	540	532	516	493	477	457	415	372	
6/15/2022	313	309	292	283	283	293	321	343	373	412	454	489	517	539	552	558	559	551	534	510	492	470	428	384	
6/16/2022	348	318	301	290	280	290	308	330	359	389	419	451	490	523	545	557	562	561	549	529	493	470	429	388	
6/17/2022	346	320	302	292	292	307	330	351	380	411	446	488	522	547	567	580	582	574	558	539	514	486	437	384	
6/18/2022	350	323	304	291	294	281	280	298	348	399	447	486	518	542	556	563	564	556	537	509	489	470	431	390	
6/19/2022	361	331	313	299	292	288	287	295	305	355	408	457	495	527	551	565	571	570	561	540	512	492	473	435	394
6/20/2022	367	339	320	308	307	321	344	361	398	448	488	528	563	590	607	617	620	611	591	560	537	511	468	421	
6/21/2022	377	348	327	314	312	325	347	365	394	433	472	504	537	564	586	597	602	598	579	550	529	497	458	401	362
6/22/2022	341	307	290	284	281	297	324	341	371	409	446	484	512	532	545	545	540	540	526	504	481	464	424	378	
6/23/2022	359	314	297	287	287	303	328	347	378	419	462	498	528	552	567	575	577	569	551	525	505	481	440	395	
6/24/2022	358	311	313	302	301	316	339	359	395	442	488	530	568	598	628	651	637	645	640	619	586	559	531	485	437
6/25/2022	393	362	339	323	314	309	305	319	377	424	484	526	561	588	602	608	607	596	573	542	518	496	460	417	
6/26/2022	388	357	335	319	310	304	301	321	370	424	472	510	541	564	573	574	568	555	533	506	487	469	433	393	
6/27/2022	399	341	328	318	314	322	345	368	399	441	491	530	569	600	607	609	610	600	580	560	538	503	462	415	
6/28/2022	374	348	330	318	314	327	350	368	398	441	496	535	572	602	617	626	629	618	607	583	567	543	507	427	
6/29/2022	386	355	335	321	319	311	353	371	405	449	491	528	557	580	589	590	583	570	550	523	504	483	443	398	
6/30/2022	365	337	318	306	305	319	342	361	395	439	483	522	554	580	595	602	604	595	574	546	524	500	458	411	
7/1/2022	364	338	321	310	309	322	343	357	387	428	470	508	539	561	569	566	562	546	525	499	482	461	423	385	
7/2/2022	349	325	307	295	289	285	294	298	341	387	427	463	490	509	514	508	497	481	461	439	426	411	384	353	
7/3/2022	360	307	291	284	281	276	274	274	288	330	377	416	456	495	535	565	585	607	615	617	612	605	604	591	578
7/4/2022	329	307	290	279	277	266	258	272	318	366	409	441	468	482	484	476	462	445	422	402	385	363	300	233	
7/5/2022	315	294	280	272	274	289	314	328	350	381	412	441	462	474	476	469	457	441	425	409	401	387	358	328	
7/6/2022	295	277	265	259	262	279	305	330	344	378	414	449	477	498	513	521	522	514	497	474	459	438	400	362	
7/7/2022	322	300	286	278	279	294	318	333	357	390	426	459	483	499	505	502	493	479	461	442	430	413	381	346	
7/8/2022	314	294	281	274	275	292	316	332	359	398	42														

9/26/2022	914	291	279	271	273	293	326	337	351	381	415	451	484	509	533	528	526	512	488	470	457	422	381	343	
9/27/2022	310	289	276	268	270	290	324	334	348	378	411	446	478	505	517	521	522	508	485	467	451	419	379	341	
9/28/2022	306	288	272	265	267	287	321	331	344	374	407	441	473	498	505	506	498	478	456	441	411	409	362	326	
9/29/2022	296	276	264	257	269	281	316	326	338	368	400	434	466	492	509	516	516	507	488	467	451	418	377	338	
9/30/2022	303	283	270	263	265	286	320	330	343	371	404	438	466	489	502	506	504	491	468	452	440	408	369	332	
10/1/2022	296	276	262	252	249	251	261	272	295	327	356	385	417	443	459	467	467	455	428	420	397	369	338	308	
10/2/2022	286	267	254	245	242	245	255	267	288	319	348	373	400	425	441	449	449	437	411	405	386	359	329	300	
10/3/2022	277	259	248	242	245	265	297	309	314	334	358	383	408	431	446	454	455	444	421	417	396	367	332	300	
10/4/2022	277	260	249	241	246	266	299	312	322	350	383	423	465	501	535	563	579	576	549	521	498	471	436	355	
10/5/2022	316	294	280	271	272	289	319	331	340	368	400	437	471	499	517	524	524	509	481	471	445	406	366	331	
10/6/2022	301	281	268	260	261	280	310	322	330	356	384	418	450	478	496	505	506	493	467	458	433	395	357	322	
10/7/2022	292	271	260	253	255	274	305	317	325	349	378	410	442	469	487	498	501	489	464	456	431	393	355	320	
10/8/2022	289	270	257	248	245	248	257	269	292	325	356	387	421	450	471	484	481	454	443	418	384	351	319	287	
10/9/2022	298	278	265	256	252	255	264	276	303	341	378	420	464	500	532	557	571	571	546	517	483	449	392	355	
10/10/2022	326	305	287	278	279	296	312	324	344	378	420	464	500	532	557	571	571	546	517	483	449	392	355		
10/11/2022	325	305	288	278	279	296	315	326	345	381	425	470	515	550	578	597	606	595	565	541	501	464	418	367	
10/12/2022	333	310	294	284	284	300	329	341	352	381	419	460	506	536	544	553	552	536	506	493	465	424	380	343	
10/13/2022	314	291	279	270	271	288	318	330	341	369	402	441	478	509	530	542	545	532	504	492	463	422	377	340	
10/14/2022	310	289	275	267	268	285	316	328	338	365	397	436	472	503	525	538	541	529	502	489	461	419	375	338	
10/15/2022	306	285	271	264	266	286	307	319	331	358	391	425	461	491	502	505	493	465	453	427	391	358	326		
10/16/2022	303	282	268	258	254	256	265	277	300	338	366	398	433	462	481	491	491	482	454	443	418	384	352	320	
10/17/2022	298	278	265	258	259	278	309	321	328	352	379	410	441	467	484	491	491	478	453	445	422	386	350	316	
10/18/2022	286	268	256	249	251	270	302	314	320	343	370	408	448	484	514	522	522	482	483	471	447	403	368	332	
10/19/2022	278	260	249	243	244	265	298	309	314	333	356	380	403	426	440	446	445	432	409	407	389	360	327	295	
10/20/2022	262	246	236	231	235	256	289	302	304	321	341	361	380	399	413	422	426	417	397	396	380	352	318	287	
10/21/2022	263	247	237	232	236	258	292	305	307	324	344	363	380	398	406	421	428	428	404	405	378	350	322	293	
10/22/2022	260	240	238	233	238	259	293	306	308	324	343	363	381	399	408	426	428	420	396	392	370	340	302	272	
10/23/2022	271	253	241	234	232	256	287	299	309	326	343	363	389	415	434	445	449	441	416	409	389	361	330	304	
10/24/2022	277	259	248	242	245	264	297	309	314	335	360	384	411	437	455	451	460	462	451	428	423	402	371	336	305
10/25/2022	273	256	245	239	242	262	295	307	312	333	358	384	412	437	455	466	470	460	457	431	409	376	340	306	
10/26/2022	271	254	244	238	241	261	294	306	310	329	351	373	394	416	431	438	439	429	408	405	387	359	325	293	
10/27/2022	240	224	226	222	227	248	280	292	296	308	327	349	370	392	415	436	443	443	426	426	405	374	340	304	
10/28/2022	244	231	223	220	226	248	281	295	305	303	312	333	354	344	353	361	366	364	352	356	343	318	288	260	
10/29/2022	250	235	226	220	220	225	238	250	266	286	301	318	333	346	356	363	367	363	349	350	337	314	288	263	
10/30/2022	255	239	229	223	222	227	240	252	268	280	308	326	343	358	368	376	379	375	359	359	345	322	295	269	
10/31/2022	261	245	236	232	237	258	293	306	309	324	342	360	378	394	409	418	422	415	397	397	382	355	322	292	
11/1/2022	247	236	227	221	219	243	279	294	300	306	316	337	353	371	385	393	393	380	368	349	328	298	270	241	
11/2/2022	235	224	226	221	223	229	253	268	302	307	309	311	313	313	315	323	323	324	318	329	314	284	250	247	
11/3/2022	229	217	211	209	216	237	269	281	297	294	302	311	319	325	330	332	331	334	344	330	313	290	263	238	
11/4/2022	251	235	226	221	225	244	274	286	302	329	358	401	435	465	484	496	497	496	495	466	452	430	395	367	
11/5/2022	267	249	237	229	227	229	237	248	277	308	338	369	397	416	424	421	410	403	401	379	353	325	299	273	
11/6/2022	247	231	221	215	214	217	236	258	264	292	315	339	365	380	388	397	380	376	378	357	333	310	285	261	
11/7/2022	260	244	236	230	224	245	275	286	308	328	360	392	426	462	489	497	476	476	466	445	427	392	358	296	
11/8/2022	263	246	235	230	231	251	280	292	306	322	365	397	425	447	458	458	450	445	442	419	390	356	318	287	
11/9/2022	252	236	227	222	226	245	275	287	300	321	349	378	403	423	434	435	428	424	425	403	376	343	308	278	
11/10/2022	248	233	223	219	223	242	272	284	297	318	344	372	397	416	426	427	421	417	419	397	371	338	305	275	
11/11/2022	236	222	213	210	214	230	253	266	282	304	327	352	371	384	390	388	389	379	372	375	357	334	310	283	257
11/12/2022	236	222	218	207	211	231	259	288	303	321	344	368	393	405	404	394	395	390	369	368	348	305	276	252	
11/13/2022	240	224	216	208	205	218	239	252	266	288	305	313	328	343	355	349	346	345	343	326	313	287	250	247	
11/14/2022	234	220	213	209	215	235	266	279	299	304	320	339	358	372	381	383	379	379	384	367	343	315	286	258	
11/15/2022	240	225	217	213	218	238	268	281	292	310	331	355	377	395	405	407	402	400	404	384	359	327	296	267	
11/16/2022	232	219	212	208	214	234	266	278	288	300	316	332	349	362	370	372	368	369	375	358	335	310	281	253	
11/17/2022	230	217	210	207	212	233	265	277	286	299	312	326	342	354	362	364	361	362	369	353	330	306	277	250	
11/18/2022	240	223	216	212	216	236	267	280	298	308	325	340	356	368	380	385	384	384	384	379	359	332	304	278	249
11/19/2022	225	211	205	201	203	209	220	235	256	274	286	297	306	316	325	315	313	317	324	314	298	280	249	233	
11/20/2022	215	204	198	194	196	203	215	228	248	261	267	273	278	283	283	283	283	288	298	289	275	258	239	220	
11/21/2022	217	207	203	202	210	213	218	243	248	263	297	309	303	303	304	306	306	306	312	315	319	305	285	261	239
11/22/2022	227	219	216	217	227	254	293	312	317	319	318	316	313	311	309	307	308	319	340	339	327	311	290	270	
11/23/2022	245	237	234	238	246	272	310	325	326	324	319	316	313												

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

Year	Month	Actual Peak Demand	Demand Response Activated	Estimated Peak Demand	Day	Hour	System-Average Temperature
		(MW)	(MW)	(MW)			(Degrees F)
2022	1	663	n/a	n/a	1/24/2022	8:00	33.2
	2	531	n/a	n/a	2/1/2022	8:00	40.6
	3	525	n/a	n/a	3/18/2022	18:00	88.4
	4	588	n/a	n/a	4/6/2022	17:00	88.5
	5	649	n/a	n/a	5/18/2022	17:00	93.3
	6	704	n/a	n/a	6/15/2022	17:00	96.7
	7	690	n/a	n/a	7/13/2022	17:00	95.7
	8	694	n/a	n/a	8/23/2022	15:00	94.4
	9	676	n/a	n/a	9/6/2022	17:00	94.8
	10	576	n/a	n/a	10/10/2022	15:00	95.9
	11	597	n/a	n/a	11/6/2022	13:00	86.8
	12	620	n/a	n/a	12/25/2022	9:00	44.3
2021	1	509	n/a	n/a	1/19/2021	8:00	39.40
	2	605	n/a	n/a	2/4/2021	8:00	35.10
	3	576	n/a	n/a	3/31/2021	17:00	89.22
	4	591	n/a	n/a	4/29/2021	18:00	89.26
	5	645	n/a	n/a	5/5/2021	18:00	91.71
	6	647	n/a	n/a	6/10/2021	17:00	93.27
	7	677	n/a	n/a	7/26/2021	16:00	94.61
	8	692	n/a	n/a	8/18/2021	17:00	95.17
	9	636	n/a	n/a	9/13/2021	15:00	90.33
	10	638	n/a	n/a	10/7/2021	17:00	93.59
	11	472	n/a	n/a	11/3/2021	17:00	82.54
	12	457	n/a	n/a	12/10/2021	15:00	83.73
2020	1	600	n/a	n/a	1/22/2020	8:00	32.93
	2	468	n/a	n/a	2/13/2020	16:00	85.45
	3	579	n/a	n/a	3/30/2020	18:00	90.41
	4	585	n/a	n/a	4/13/2020	16:00	89.40
	5	633	n/a	n/a	5/21/2020	17:00	94.38
	6	678	n/a	n/a	6/25/2020	16:00	96.69
	7	659	n/a	n/a	7/13/2020	16:00	93.60
	8	657	n/a	n/a	8/27/2020	17:00	93.90
	9	666	n/a	n/a	9/4/2020	17:00	95.10
	10	608	n/a	n/a	10/8/2020	17:00	91.49
	11	510	n/a	n/a	11/1/2020	16:00	87.89
	12	519	n/a	n/a	12/9/2020	8:00	38.25
Notes							
(Include Notes Here)							

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

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	603	19	8	0.4221	0.4221	1.6683
2024	652	19	8	0.4564	0.4564	1.8039
2025	707	22	8	0.4949	0.4949	1.9561
2026	757	24	8	0.5299	0.5299	2.0944
2027	795	25	8	0.5565	0.5565	2.1995
2028	833	28	8	0.5831	0.5831	2.3047
2029	881	28	8	0.6167	0.6167	2.4375
2030	949	30	8	0.6643	0.6643	2.6256
2031	1021	31	8	0.7147	0.7147	2.8248
2032	1087	33	8	0.7609	0.7609	3.0074
Notes						
(Include Notes Here)						

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

[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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes									
(Include Notes Here)									

TYSP Year 2023
 Staff's Data Request # 1
 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	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0
Notes										
(Include Notes Here)										

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

[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	0	N	0	0	N	0	0
2014	0	N	0	0	N	0	0
2015	0	N	0	0	N	0	0
2016	0	N	0	0	N	0	0
2017	0	N	0	0	N	0	0
2018	0	N	0	0	N	0	0
2019	0	N	0	0	N	0	0
2020	0	N	0	0	N	0	0
2021	0	N	0	0	N	0	0
2022	0	N	0	0	N	0	0
Notes							
(Include Notes Here)							

TYSP 2023 Suppl. Excel TablesI

Loss of Load Probability, Reserve Margin, and Expected Unserved Energy						
Base Case Load Forecast						
		Annual Isolated			Annual Assisted	
	Loss of Load	Reserve Margin (%)	Expected	Loss of Load	Reserve Margin (%)	Expected
	Probability	(Including Firm	Unserved Energy	Probability	(Including Firm	Unserved Energy
Year	(Days/Yr)	Purchases)	(MWh)	(Days/Yr)	Purchases)	(MWh)
2023	0.1*	15	0	0.1*	15	0
2024		15	0		15	0
2025		17	0		17	0
2026		16	0		16	0
2027		15	0		15	0
2028		16	0		16	0
2029		16	0		16	0
2030		16	0		16	0
2031		16	0		16	0
2032		15	0		15	0

TYSP 2023 Suppl. Excel TablesI

Existing Generating Unit Operating Performance									
		Planned Outage Factor		Forced Outage Factor		Equivalent Availability Factor		Average Net Operating	
		(POF)		(FOF)		(EAF)		Heat Rate (ANOHR)	
Plant Name	Unit No.	Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Charles Larsen Memorial	GT2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Charles Larsen Memorial	GT3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Charles Larsen Memorial	8 CT	11.5	11	1.9	1.5	82.9	90	9.5	905
Charles Larsen Memorial	8	12.23	12	4.14	4	73.97	90	9	9
Winston Peaking Station	1-20	0	0	0.1	0	99.3	99	10	10
C.D. McIntosh, Jr.	D1	4.4	3	1.5	0.5	93.8	99	22	20
C.D. McIntosh, Jr.	D2	4.4	3	8.8	5	86.8	99	32	30
C.D. McIntosh, Jr.	GT1	0.1	0	0.5	0	99.4	99	15	15
C.D. McIntosh, Jr.	GT2	3.6	3	0.3	0	92.6	99	10	10
C.D. McIntosh, Jr.	3	N/A							
C.D. McIntosh, Jr.	5 CT	11.9	5	2.9	2	84.1	90	7.963	8
C.D. McIntosh, Jr.	5	12.12	5	2.99	2	83.75	90	7.3	7
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 ²	Primary Fuel ³	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor ⁴
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Charles Larsen Memorial	GT2*	Polk	GT	NG	11	1962	10	14	10	14	10	14	0
Charles Larsen Memorial	GT3*	Polk	GT	NG	12	1962	9	13	9	13	9	13	0
Charles Larsen Memorial	8	Polk	CC	NG/DFO	4	1956	110	126	114	124	114.4	124.4	19
Winston Peaking Station	1-20	Polk	IC	DFO	12	2001	50	50	50	50	50	50	0
C.D. McIntosh, Jr.	D1	Polk	IC	DFO	1	1970	2.5	2.5	2.5	2.5	2.5	2.5	0
C.D. McIntosh, Jr.	D2	Polk	IC	DFO	1	1970	2.5	2.5	2.5	2.5	2.5	2.5	0.4
C.D. McIntosh, Jr.	GT1	Polk	GT	NG	5	1973	17	19	17	19	17	19	0.4
C.D. McIntosh, Jr.	GT2	Polk	ST	NG/DFO	6	2020	120	125	120	125	119.5	124.5	4
C.D. McIntosh, Jr.	5	Polk	CC	NG	5	2001	359	405	352	398	352	398	63

Notes													
² Unit Type CC Combined Cycle CT Combined Cycle Combustion GT Combustion Gas Turbine ST Steam Turbine		³ Primary Fuel DFO Distillate Fuel Oil BIT Bituminous Coal NG Natural Gas			⁴ 2022 Actual Capacity Factor * in long term maintenance and are not in operation at this time.								

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

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	(%)
C.D. McIntosh, Jr.	ME01-06	Lakeland, Polk County	IC	Gas	8	2024	120	120	120	120	120	120	20
Notes													
This project consists of installation of 6 units of 20 MW each RICE Engines.													

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	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
There are no utility-owned existing renewable resources in Lakeland as of now.													

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

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	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													

TYSP 2023 Suppl. Excel TablesI

Nominal, Firm Purchases

	Firm Purchase	
Year	Capacity *	\$/MWh
HISTORY:		
2020	N/A	N/A
2021	125	52
2022	125	91
FORECAST:		
2023	125	50
2024	135	60
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
Orlando Utilities Commission	System	N/A	Orange	N/A	N/A	N/A	N/A	N/A	N/A	125*	125	4/1/2021	12/31/2024
Notes													
The contract MW will be 135 MW for summer 2024.													

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

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
Longroad Energy Holding LLC	RP Funding Center	n/a	Lakeland, Polk County, FL	PV	Sunlight	0.25	0.25	0.25	0.25	0.25	0.25	4/1/2010	3/30/2030
Longroad Energy Holding LLC	Airport I	n/a	Lakeland, Polk County, FL	PV	Sunlight	2.25	2.25	2.25	2.25	2.25	2.25	12/22/2011	11/1/2036
Toroise Clean Energy Partners, LLC	Airport II	n/a	Lakeland, Polk County, FL	PV	Sunlight	2.75	2.75	2.75	2.75	2.75	2.75	9/16/2012	8/31/2037
TerraForm Power, LLC	Sutton	n/a	Lakeland, Polk County, FL	PV	Sunlight	6	6	6	6	6	6	7/6/2015	7/1/2040
Clearway Energy Group, LLC	Airport III	n/a	Lakeland, Polk County, FL	PV	Sunlight	3.15	3.15	3.15	3.15	3.15	3.15	12/21/2016	11/30/2041
Notes													
(Include Notes Here)													

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes (Include Notes Here)													

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Notes													
(Include Notes Here)													

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

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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	0	0	0	0	0	0	0	0	0	0	0
Utility - Non-Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Purchase - Firm	0	0	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	17	18	18	180	180	180	180	180	180	180	180
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	7	8	9	9	10	11	12	13	14	15	16
Total	24	26	27	189	190	191	192	193	194	195	196
Notes											
(Include Notes Here)											

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 (%)
Beirmann Tennis	Y	2018	0.4	0.8	70

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 (%)
N/A	N	N/A	N/A	N/A	N/A

Notes
 (Include Notes Here)

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

Year		As-Available Energy (\$/MWh)	On-Peak Average (\$/MWh)	Off-Peak Average (\$/MWh)
Actual	2013	N/A	N/A	N/A
	2014	N/A	N/A	N/A
	2015	N/A	N/A	N/A
	2016	N/A	N/A	N/A
	2017	N/A	N/A	N/A
	2018	N/A	N/A	N/A
	2019	N/A	N/A	N/A
	2020	N/A	N/A	N/A
	2021	N/A	N/A	N/A
	2022	N/A	N/A	N/A
Projected	2023	N/A	N/A	N/A
	2024	N/A	N/A	N/A
	2025	N/A	N/A	N/A
	2026	N/A	N/A	N/A
	2027	N/A	N/A	N/A
	2028	N/A	N/A	N/A
	2029	N/A	N/A	N/A
	2030	N/A	N/A	N/A
	2031	N/A	N/A	N/A
	2032	N/A	N/A	N/A
Notes				
This information is for IOUs only.				

TYSP Year 2023
 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				
N/A	N/A	N/A	N/A	N/A
Combustion Turbine Unit Additions				
N/A	N/A	N/A	N/A	N/A
Combined Cycle Unit Additions				
N/A	N/A	N/A	N/A	N/A
Steam Turbine Unit Additions				
N/A	N/A	N/A	N/A	N/A
Notes				
(Include Notes Here)				

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

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%) ¹											
				Actual	Projected										
				2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Charles Larsen Memorial	GT2	GT	NG	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Charles Larsen Memorial	GT3	GT	NG	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Charles Larsen Memorial	8	CC	NG	19.00	22.00	47.00	29.00	45.00	37.00	38.00	30.00	38.00	50.00	50.00	
Winston Peaking Station	1-20	IC	DFO	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	D1	IC	DFO	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	D2	IC	DFO	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	GT1	GT	NG	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.1	3	ST	BIT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
C.D. McIntosh, Jr.	5	CC	NG	63.00	~ 73	~ 56	~ 70	~ 71	~ 66	~ 65	~ 66	~ 65	~ 65	~ 65	
C.D. McIntosh, Jr.	GT2	GT	NG	4.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Reciprocating Engines	ME01-06	RICE	NG	N/A	N/A	N/A	~20	~20	~20	~20	~20	~20	~20	~20	

Notes

¹ Net Capacity Factors: These capacity factors are based on assumption that no economy energy purchase from the market. Hence those numbers may be lower in reality.

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

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

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

Transmission Line	Line Length	Nominal Voltage	Date Need	Date TLSA	In-Service Date
	(Miles)	(kV)	Approved	Certified	
Hamilton-Dranefield 69 KV	5.5	69	N/A	N/A	Aug-24
Notes					
(Include Notes Here)					

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

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	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
Notes				
Not impacted by this rule.				

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	
MGT2	CT	gas/oil	119.5		X						
3	steam	coal/gas	342							X	
5	CC	gas	352		X						
8	CC	gas/oil	114.5		X			X			

Notes

ACE or replacement: Unit 3 was our only unit subject to ACE. It was retired in April 2021. It is too early to know whether there will be any impacts to Units 5, 8, and MGT2 from the ACE rule replacement (proposal scheduled to be released around April 2023).

MATS: Unit 3 was our only unit subject to MATS. It was retired in April 2021.

CWIS: Unit 8's operation may be limited to simple cycle only, dependent on the costs of CWIS compliance strategies.

CCR Non-Hazardous Waste: CCR Material from former Unit 3 continues to be regulated even though the Unit has been retired.

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
MGT2	CT	gas/oil	119.5		***					
3	steam	coal/gas	342						15.6**	
5	CC	gas	352		***					
8	CC	gas/oil	114.5		***			1.0*		

Notes

*Unit 8 - CWIS amount is dependent on the outcome of next permitting cycle and the engineering review of compliance strategies.

**Unit 3 - CCR non-hazardous waste amount is an estimate for closure of the on-site landfill and elimination of the process ponds. EPA has indicated additional regulation of landfills closed prior to the CCR rule taking effect. This could lead to additional monitoring and closure costs. Until the rule is finalized, total economic effects cannot be quantified.

***ACE: Unit 3 was our only unit subject to ACE. It was retired in April 2021. It is too early to know whether there will be any impacts to Units 5, 8, and MGT2 from the ACE rule replacement (proposal scheduled to be released around April 2023).

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
MGT2	CT	gas/oil	119.5		**					
5	CC	gas	352		**					
8	CC	gas/oil	114.5		**			*		
Notes										
*Unit 8 CWIS - If physical changes are needed to comply with the rule, they will be combined with planned outages for implementation.										
**ACE: Unit 3 was our only unit subject to ACE. It was retired in April 2021. It is too early to know whether there will be any impacts to Units 5, 8, and MGT2 from the ACE rule replacement (proposal scheduled to be released around April 2023).										

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	0	N/A	786	3.99	2018	3.89	0.00	19.19	0.00	24.48	0	N/A
	2014	0	N/A	278	3.59	1714	4.53	0.00	20.22	0.00	26.18	0	N/A
	2015	0	N/A	788	3.32	2204	2.72	0.00	12.32	0.00	17.04	0	N/A
	2016	0	N/A	805	3.16	1857	2.54	0.00	10.75	0.00	15.72	0	N/A
	2017	0	N/A	846	2.78	1589	3.05	0.00	9.34	0.00	12.92	0	N/A
	2018	0	N/A	969	2.76	2270	3.20	0.00	N/A	0.00	16.49	0	N/A
	2019	0	N/A	548	2.64	2382	2.75	0.00	N/A	0.00	16.60	0	N/A
	2020	0	N/A	385	2.45	2063	2.72	0.00	N/A	1.00	13.79	0	N/A
	2021	0	N/A	500	2.45	2259	3.89	0.00	N/A	2.41	15.15	0	N/A
	2022	0	N/A	0	N/A	2477	7.39	0.00	N/A	0.00	18.39	0	N/A
	2023	0	N/A	0	N/A	2752	3.45	0.00	N/A	1.00	22.73	0	N/A
Projected	2024	0	N/A	0	N/A	2719	4.07	0.00	N/A	5.00	18.87	0	N/A
	2025	0	N/A	0	N/A	2955	3.95	0.00	N/A	1.00	22.39	0	N/A
	2026	0	N/A	0	N/A	3197	4.06	0.00	N/A	1.00	23.39	0	N/A
	2027	0	N/A	0	N/A	2965	4.08	0.00	N/A	0.00	24.66	0	N/A
	2028	0	N/A	0	N/A	2917	4.19	0.00	N/A	2.00	25.79	0	N/A
	2029	0	N/A	0	N/A	2844	4.30	0.00	N/A	2.00	26.81	0	N/A
	2030	0	N/A	0	N/A	2516	4.37	0.00	N/A	2.00	27.85	0	N/A
	2031	0	N/A	0	N/A	3234	4.46	0.00	N/A	4.00	29.09	0	N/A
	2032	0	N/A	0	N/A	3234	4.56	0.00	N/A	9.00	30.22	0	N/A

Notes
 (Include Notes Here)