



May 6, 2022

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

Re: 2022 Ten Year Site Plan – Staff’s Data Request #1 Questions 3 - 95

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, Questions 3-95, in relation to Lakeland Electric’s 2022 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 period 2022-2031 (current planning period) in PDF format.

Submitted on April 1, 2022.

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, 2022.

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 2022 to FL PSC.

Load & Demand Forecasting

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 14, 2021, and November 7, 2021).

N/A.

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.

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 are 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 2022 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

Forecast Improvements/Changes

- Lakeland has added electric vehicles in the forecast
- Utility solar is now separate from net metered solar

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.

LE has one docket - Docket No. 20220075-EU - open regarding a territory swap with the City of Bartow.

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 LAK2022TYSP_SUP_ErrorFans.xlsx contains both actual and weather normalized values where applicable. Data goes back to 2008 and has been updated with 2021 actuals.

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

N/A.

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.

N/A.

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 2021 – the highest growth rate experienced since 2006, just prior to the Great Recession of 2007-2009. Industrial customer growth is continuing to experience negative growth, but this is due to rate migration into the commercial rate class – generally an indication of more energy efficiency – and not due to large businesses leaving our service area. In contrast, Commercial rate class grew in 2021 at 2.6%, again the highest growth rate experienced since 2006.

	Residential	Commercial	Industrial	Total
2012-2021 AAGR	1.3%	1.2%	-1.8%	1.2%
2022-2031 AAGR	1.1%	1.0%	1.8%	1.1%

LE’s 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 2020 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.

While the pandemic did change consumption trends in 2021, it is not expected to substantially alter the long-term trends.

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
2012-2021 AAGR	-0.2%	0.0%	3.7%
2022-2031 AAGR	-0.4%	-0.2%	-1.2%

- 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. Please include a detailed discussion of how the Company’s demand management program(s) and conservation/energy-efficiency program(s) impact the growth/decline of the trends.

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.

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

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

Conservation

Conservation impacts are assumed to be reflected in the historical time series.

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 is considered winter peaking. 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 winter peaking in the 10 year forecast horizon. 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. Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the following, respectively:

- a. Summer Peak Demand.
- b. Winter Peak Demand.
- c. Annual Retail Energy Sales.

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.

14. Please provide responses to the following questions regarding the weather factors considered in the Company's retail energy sales and peak demand forecasts:
- a. Please identify, with corresponding explanations, all the weather-related input variables that were used in the respective Retail Energy Sales, Winter Peak Demand, and Summer Peak Demand models.
 - b. Please specify the source(s) of the weather data used in the aforementioned forecasting models.
 - c. Please explain in detail the process/procedure/method, if any, the Company utilized to convert the raw weather data into the values of the model input variables.
 - d. Please specify with corresponding explanations:
 - e. How many years' historical weather data was used in developing each retail energy sales and peak demand model.
 - f. How many years' historical weather data was used in the process of these models' calibration and/or validation.
 - g. 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 2022 – 2031) 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 above.

15. **[Investor-Owned Utilities Only]** If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:
- a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.
 - b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
 - c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.

- d. Schedule 3.1 - History and Forecast of Summer Peak Demand.
- e. Schedule 3.2 - History and Forecast of Winter Peak Demand.
- f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.
- g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

N/A

16. 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 2020 and 2021.

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

- b. Have any of your 2022 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.

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

- a. Please explain in detail how the Utility's load forecast accounts for the impact of customer owned/leased renewable generation (solar and otherwise).

With the 2022 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-owned/leased renewable generation (solar and otherwise) on the Utility's retail demand and energy forecasts, by class and in total, for 2022 through 2031.

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)
2021	5,671
2022	6,580
2023	7,537
2024	8,515
2025	9,451
2026	10,408
2027	11,365
2028	12,353
2029	13,279
2030	14,236
2031	15,193

- c. If the Utility maintains a forecast for the planning horizon (2022-2031) of the number of customers with customer-owned/leased renewable generation (solar and otherwise), by customer class, please provide.

LE’s forecast currently does not separate between residential and commercial solar. Combined projections are below.

Year	Total Customers (Solar)
2022	694
2023	795
2024	896
2025	997
2026	1,099
2027	1,200
2028	1,301
2029	1,402
2030	1,504
2031	1,605

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

LE 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.

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

Lakeland Electric is a member of the Florida Coordinating Group and is part of an Electric Vehicle Working Group committee inside of FCG. The committee has access to DMV PEV data through Orlando Utilities Commission that details PEV and hybrid electric vehicle ownership by zip code.

20. 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.

See Attached in Excel Files.

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

PEV customers have 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.

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

Lakeland Electric worked with the City of Lakeland to add Level 1, Level 2 and 3 charging categories to our city's electrical inspection process, E-Trakit.

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

No distribution upgrades have been required to facilitate PEV charging as of yet. We have done make-ready projects but haven't had to upgrade circuits.

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

LE worked with the City of Lakeland to add Level 1, Level 2 and 3 charging categories to our city's electrical inspection process, E-Trakit.

26. What are the major drivers of the Company's PEV growth?

- Tax Credit and Rebates.
- Increase in Public Charging Stations.
- Increase in EV Models.
- Public Outreach and EV Events

27. 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.

28. 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 since the estimate is less than 0.1%

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

N/A

30. **[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.

N/A

31. **[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.

N/A

32. **[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.

N/A

33. 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.

Attached in Excel Files.

Generation & Transmission

34. 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 Files.

35. 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 Files.

36. Please refer to the Excel Tables File (Utility Planned Traditional). Complete the table by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation)

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

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

Attached in Excel Files.

37. 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.

N/A. None of the renewable energy generation resources are utility owned.

38. 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.

N/A

39. 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 had no planned utility-owned renewable energy generation that have, within the past year, been cancelled, delayed, or reduced in scope. But LE's 16 MW Solar PPA project planned for 2024 could be delayed due to supply-chain issues.

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

Attached in Excel Files

41. 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.

Attached in Excel Files.

42. 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.

N/A. No traditional PPA is planned other than existing PPA with the OUC.

43. 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.

Attached in Excel Files.

44. 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.

Attached in Excel Files. The 16 MW Solar PPA project's contract is on hold.

45. 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 had no planned PPAs with a renewable generator that have, within the past year, been cancelled, delayed, or reduced in scope. But the planned 16 MW Solar PPA's contract is on hold due to supply-chain and pricing issues.

46. 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.

N/A

47. 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.

N/A

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

N/A

49. 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 Files.

50. **[Investor-Owned Utilities Only]** Please refer to the Excel Tables File (Potential Solar Sites). Complete the table by providing information on all of the Company's plant sites that are potential candidates for utility-scale (>2 MW) solar installations.

N/A

51. 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.

52. **[Investor-Owned Utilities Only]** Please discuss whether the Company has been approached by renewable energy generators during the year prior to the current planning period regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.

N/A

53. 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.

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

The continued advancements in materials and manufacturing in the past caused the overall declining trends in cost of energy storage technologies until 2021. However, after 2021, due to supply-chain and inflation issues after the Pandemic has caused the costs of goods and services on energy storage technologies going up in the service territory.

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

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

56. 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 in determination of location of batteries will be considered.

57. Please explain whether ratepayers have expressed interest in energy storage technologies. If so, 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).

58. 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.

Attached in Excel Files.

59. 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.

None planned at this moment.

60. 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 yet.

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

Not yet done.

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

Will update if any in the future.

61. 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.

62. 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.

Project for renewable project contribution is in ideation. Once details of the project are agreed upon, a full schedule will be developed.

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

LE stays abreast of research and development for utility power technologies by connecting with industry professionals and other utilities initiatives. LE plans to implement any results from the

research and development in future to make its portfolio economic, robust, flexible, and balanced.

64. **[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.

N/A

65. 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.

Attached in Excel Files.

66. 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.

For RICE engines, the construction permit is in place and construction will start this year. 120 MW size RICE engines are planned to be available in 2024. For 16 MW solar PPA project, resource permit application is in place and the PPA contract is on hold due to pricing and supply-chain issues. Once cleared, the construction will start.

67. 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.

Attached in Excel files.

68. **[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.

N/A

69. 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.

Attached in Excel Files.

70. 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.

Attached in Excel Files.

71. 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.

Attached in Excel Files.

Environmental

72. 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 has not assumed any carbon dioxide compliance costs in the resource planning process.

- 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.

N/A

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

N/A

73. 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 Steam Electric Power Effluent Limitation Guidelines (ELG) rules have been reconsidered by EPA and a final rule went into effect August 31, 2020. This rule impacted coal burning units. Compliance was achieved by retiring Unit 3 on April 4, 2021.

The Cooling Water Intake Structures Rule (CWIS) Rule 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, 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.

74. 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 and unit type.

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

75. 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 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 8 CC - Unit 8 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 expected.

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

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

76. 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."

77. 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."

78. 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."

79. 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

80. 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.

Please see in the Excel Sheet.

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

Lakeland Electric uses a combination of methods to determine fuel price forecasts for analysis purposes and reports. These include use of professionally prepared forecasts by respected industry sources such as Argus, EVA Energy Ventures Analysis, The Energy Authority and government forecasts from the EIA. We also examine and compare the NYMEX Henry Hub futures market to the figures from the government and industry sources. These are industry standard practices followed in preparation of long-range forecasts.

82. 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. Coal prices are likely to continue to rise due to reduced production and a strong market for the commodity.

b. Natural Gas

Natural gas prices have moved higher in the short term due to reduced availability of coal, increased demand from both domestic and foreign consumers of the fuel, storage levels of natural gas being well beneath the five-year level, and both national and international policy issues. Current forwards curve projection for CY 2022 to Winter CY 2023 have prices being forecasted at high levels of \$6.00 to \$7.00 MMBtus during the uncertain months from European supply needs and inventory levels in the US market.

c. Nuclear

Nuclear costs have generally remained stable.

d. Fuel Oil

Fuel oil prices are at extreme highs at this point based upon national energy policy. The elimination of some production and pipelines, along with the uncertainties caused by geopolitical issues such as the war in Ukraine, makes the price and availability of fuel oil volatile and very uncertain.

e. Other (please specify each, if any)

N/A

83. Please provide a comparison of the Utility's 2021 fuel price forecast and the actual 2021 delivered fuel prices.

- a. Natural Gas - The original forecast provided to you by our utility showed a price of \$3.01 per MMBtu. Due to unusually high prices in February 2021 and due to elevated prices in the fall and winter, the natural gas price equated to \$3.89 per MMBtu.
- b. Coal – Due to contractual pricing, the price for coal was as predicted, \$2.45 per MMBtu.
- c. Distillate Oil – The fuel oil was predicted to be \$13.95 per MMBtu. During the course of the year, oil prices went up considerably and the average price was \$15.15

84. Please explain any notable changes in the Utility's forecast of fuel prices used to prepare the Utility's 2022 TYSP compared to the fuel process used to prepare the Utility's 2021 TYSP.

The utility uses the same methodology for projection of the fuel prices as was used in the 2021 TYSP. As a measure of good utility practices, we simulate the dispatch of the units using different scenarios and pricing to produce the best product possible.

85. 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, Transco, and Gulfstream Pipeline Company. The transportation contracts allow for firm transportation of natural gas and are not scheduled to require renewal in most cases for several years. Transco was added to allow the utility flexibility in the delivery of purchases made through long-term prepaid purchases.

Lakeland Electric maintains agreements with multiple suppliers to allow for diversity of supply. LE also participates in some supply agreements from time to time allowing for reductions in price.

86. 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.

There are no known major expansion projects currently for pipelines serving Lakeland Electric.

87. 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.

LNG demand may increase due to the geopolitical issues in Eastern Europe related to the Russian / Ukrainian war and its impact upon the availability of Russian natural gas in the rest of Europe. While shipping for LNG remains limited, increased demand for LNG in Europe could lead to higher prices for domestic natural gas.

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

Lakeland Electric has no plans to use firm natural gas storage during the period.

89. 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 to the utility will be indirect.

90. 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 transportation is no longer necessary for our utility due to our coal plant's closure.

91. 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.

92. 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.

Extreme Weather

93. 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.

Lakeland Electric has implemented its Extreme Cold Weather Plan from the past winter. This plan is to guide activities required to prepare for winter weather conditions (temperature less than 35°F), and to satisfy the requirements of the reliability organizations such as Florida Reliability Coordinating Council (FRCC) and NERC for Lakeland Electric (LE) Energy Production (EP). The focus of this plan is on maintaining EP's readiness during an extreme winter weather event, and to prevent cold weather-related outages. The plan includes checklists for the various equipment such as critical instruments and transmitters that may be subject to freezing conditions. There are various inspections that are required and recommendations to prevent wind chill.

Lakeland Electric has implemented periodic testing of all liquid fuel capable units to ensure that they are available for operations on liquid fuel during a cold weather event.

During the cold weather condition in last January, all critical personnel were made readily available with necessary re-positioning. There were multiple phone calls during the day as a part of coordinating effort within the Balancing Authority (BA) members to monitor real time conditions on fuel supply, generation and transmission availability. As a result, there were no de-rates and forced outage occurrence on LE's generating units during the extreme cold weather period.

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

LE and other BA members are in preparation of procedures to assess the firm capacity of units that will be capable of running based on ambient condition, firm gas pipeline capacity availability and liquid fuel storage at the site during the extreme weather.

The BA is developing a written emergency plan with gas and fuel oil management and purchasing strategy in the future. Also, LE and BA members plan to conduct a periodic load shed tabletop exercise for possible extreme cold weather events before the winter each year.

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

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

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Copy of 2022 TYSP - Data Request #1 (Nos. 1-95) - LE

Financial Assumptions			
Base Case			
AFUDC RATE		4.672	%
CAPITALIZATION RATIOS:			
	Debt	NA (Muni)	%
	Preferred	NA (Muni)	%
	Equity	NA (Muni)	%
RATE OF RETURN			
	Debt	NA (Muni)	%
	Preferred	NA (Muni)	%
	Equity	NA (Muni)	%
INCOME TAX RATE:			
	State	NA (Muni)	%
	Federal	NA (Muni)	%
	Effctive	NA (Muni)	%
OTHER TAX RATE:		NA (Muni)	%
DISCOUNT RATE:		4.5	%
TAX			
DEPRECIATION RATE:		NA (Muni)	%

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Financial Escalation Assumptions				
	General	Plant Construction	Fixed O&M	Variable O&M
	Inflation	Cost	Cost	Cost
Year	%	%	%	%
2022	6.5	6.5	6.5	6.5
2023	3.5	3.5	3.5	3.5
2024	2.5	2.5	2.5	2.5
2025	2.5	2.5	2.5	2.5
2026	2.5	2.5	2.5	2.5
2027	2.5	2.5	2.5	2.5
2028	2.5	2.5	2.5	2.5
2029	2.5	2.5	2.5	2.5
2030	2.5	2.5	2.5	2.5
2031	2.5	2.5	2.5	2.5

TYSP Year 2022
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Year	Month	Actual Peak Demand	Demand Response Activated	Estimated Peak Demand	Day	Hour	System-Average Temperature
		(MW)	(MW)	(MW)			(Degrees F)
2021	1	509	n/a	n/a	1/19/2021	8:00	39.4
	2	605	n/a	n/a	2/4/2021	8:00	35.1
	3	576	n/a	n/a	3/31/2021	17:00	89.2
	4	591	n/a	n/a	4/29/2021	18:00	89.3
	5	645	n/a	n/a	5/5/2021	18:00	91.7
	6	647	n/a	n/a	6/10/2021	17:00	93.3
	7	677	n/a	n/a	7/26/2021	16:00	94.6
	8	692	n/a	n/a	8/18/2021	17:00	95.2
	9	636	n/a	n/a	9/13/2021	15:00	90.3
	10	638	n/a	n/a	10/7/2021	17:00	93.6
	11	472	n/a	n/a	11/3/2021	17:00	82.5
	12	457	n/a	n/a	12/10/2021	15:00	83.7
2020	1	600	n/a	n/a	1/22/2020	8:00	32.9
	2	468	n/a	n/a	2/13/2020	16:00	85.5
	3	579	n/a	n/a	3/30/2020	18:00	90.4
	4	585	n/a	n/a	4/13/2020	16:00	89.4
	5	633	n/a	n/a	5/21/2020	17:00	94.4
	6	678	n/a	n/a	6/25/2020	16:00	96.7
	7	659	n/a	n/a	7/13/2020	16:00	93.6
	8	657	n/a	n/a	8/27/2020	17:00	93.9
	9	666	n/a	n/a	9/4/2020	17:00	95.1
	10	608	n/a	n/a	10/8/2020	17:00	91.5
	11	510	n/a	n/a	11/1/2020	16:00	87.9
	12	519	n/a	n/a	12/9/2020	8:00	38.3
2019	1	545	n/a	n/a	1/29/2019	8:00	50.7
	2	486	n/a	n/a	2/22/2019	17:00	82.9
	3	496	n/a	n/a	3/11/2019	18:00	80.8
	4	535	n/a	n/a	4/30/2019	18:00	83.7
	5	636	n/a	n/a	5/30/2019	17:00	95.0
	6	667	n/a	n/a	6/25/2019	17:00	95.8
	7	647	n/a	n/a	7/16/2019	17:00	91.6
	8	632	n/a	n/a	8/26/2019	17:00	92.2
	9	647	n/a	n/a	9/9/2019	17:00	94.8
	10	582	n/a	n/a	10/4/2019	17:00	91.5
	11	521	n/a	n/a	11/7/2019	16:00	87.3
	12	436	n/a	n/a	12/19/2019	8:00	45.2

Notes

There are no DR in LE, hence were not activated.

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 19

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)
2022	534	19	8	*	*	*
2023						
2024						
2025						
2026						
2027						
2028						
2029						
2030						
2031						
Notes						
(Insignificant to the grid)						

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 30

[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
2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
Notes									
There are no DR sources in Lakeland Electric.									

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 31

[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
2012	0	0	0	0	0	0	0	0	0	0
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
Notes										
(Include Notes Here)										

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 32

[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)
2012	0	N	0	0	N	0	0
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
Notes							
(Include Notes Here)							

Loss of Load Probability, Reserve Margin, and Expected Unserved Energy						
Base Case Load Forecast, Summer						
	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)
2022	0.1*	18	71	0.1*	18	0
2023		18	101		18	0
2024		17	71		17	0
2025		19	159		19	0
2026		18	0		18	0
2027		17	0		17	0
2028		16	10		16	0
2029		15	0		15	0
2030		16	70		16	0
2031		15	4		15	0

Copy of 2022 TYSP - Data Request #1 (Nos. 1-95) - LE

Existing Generating Unit Operating Performance									
Plant Name	Unit No.	Planned Outage Factor		Forced Outage Factor		Equivalent Availability Factor		Average Net Operating	
		(POF)		(FOF)		(EAF)		Heat Rate (ANOHR)	
		Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Charles Larsen Memorial	GT2	0	N/A	100	N/A	0	N/A	N/A	N/A
Charles Larsen Memorial	GT3	0	N/A	61.6	N/A	38	N/A	N/A	N/A
Charles Larsen Memorial	8 CT	9	8	1.8	3	84.4	95	14.5	14
Charles Larsen Memorial	8	9.8	8	4	3	79.1	95	10.3	10
Winston Peaking Station	1-20	0	3	0.1	3	98.5	95	15.3	14
C.D. McIntosh, Jr.	D1	0	3	4.4	3	95.2	95	16	15
C.D. McIntosh, Jr.	D2	0	3	1.9	3	97.5	95	16	15
C.D. McIntosh, Jr.	GT1	0.1	3	0.5	3	98.8	95	17.5	16
C.D. McIntosh, Jr.	GT2	5	3	0.2	3	90.1	95	12.65	12
C.D. McIntosh, Jr.	3	16.2	N/A	13.1	N/A	55.4	N/A	10.26	N/A
C.D. McIntosh, Jr.	5 CT	11	8	3.3	3	84.7	90	11.45	11
C.D. McIntosh, Jr.	5	11	8	3	3	84.8	90	7.1	7.1

NOTE: Historical - average of past three years

Projected - average of next ten years

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 35

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	106	121	106	121	15
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
C.D. McIntosh, Jr.	GT1	Polk	GT	NG	5	1973	17	19	17	19	17	19	0
C.D. McIntosh, Jr.	GT2	Polk	ST	NG/DFO	6	2020	120	125	117	122	117	122	1
C.D. McIntosh, Jr. ¹	3	Polk	ST	BIT	9	1982	219	219	205	205	205	205	26
C.D. McIntosh, Jr.	5	Polk	CC	NG	5	2001	359	405	352	398	352	398	64

Notes

¹ Lakeland's 60 percent portion of joint ownership with Orlando Utilities Commission. The unit is retired as of 4/4/2021.

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 2021 Actual Capacity Factor
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TYSP Year 2022
 Staff's Data Request # 1
 Question No. 36

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service ¹		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	1	2024	120	120	120	120	120	120	20
Notes													
Notes: ¹ Expected service date. Air construction permit is in place and the construction will start very soon. .													

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 37

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.													

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 38

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													
There are no planned utility-owned renewables resources for Lakeland.													

Nominal, Firm Purchases		
	Firm Purchases	
Year	Capacity (MW)	Energy (\$/MWh)
HISTORY:		
2019	n/a	n/a
2020	n/a	n/a
2021	125	52
FORECAST:		
2022	125	39*
2023	125	40*
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 41

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	12/31/2023

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 42

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 2022
 Staff's Data Request # 1
 Question No. 43

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:													

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 44

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
Florida Renewable Partners	McIntosh	N/A	Polk	PV	SUN	16	16	16	16	16	16	TBD	TBD
*In available basis when the project is executed.													

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 46

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 2022
 Staff's Data Request # 1
 Question No. 47

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 2022
 Staff's Data Request # 1
 Question No. 49

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
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	26	24	23	63	154	155	154	154	153	153	153
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	6	7	8	9	9	10	11	12	13	14	15
Total	32	31	31	72	163	165	165	166	166	167	168
Notes											
(Include Notes Here)											

TYSP Year 2022
Staff's Data Request # 1
Question No. 50

Plant Name	Land Available (Acres)	Potential Installed Net Capacity (MW)	Potential Obstacles to Installation
Mcintosh	219	16	Supply Chain

TYSP Year 2022
Staff's Data Request # 1
Question No. 58

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 2022
Staff's Data Request # 1
Question No. 59

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 2022
 Staff's Data Request # 1
 Question No. 64

Year		As-Available Energy (\$/MWh)	On-Peak Average (\$/MWh)	Off-Peak Average (\$/MWh)
Actual	2012	N/A	N/A	N/A
	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
Projected	2022	N/A	N/A	N/A
	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
Notes				
This information is for IOUs only.				

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 65

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 2022
 Staff's Data Request # 1
 Question No. 67

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)*											
				Actual	Projected										
				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Charles Larsen Memorial	GT2	GT	NG	0.00	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	0.00	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	14.67	35.00	46.00	38.00	41.00	46.00	41.00	39.00	40.00	30.00	20.00	
Winston Peaking Station	1-20	IC	DFO	0.32	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	D1	IC	DFO	0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	D2	IC	DFO	0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.	GT1	GT	NG	0.12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
C.D. McIntosh, Jr.1	3	ST	BIT	26.00	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	64.01	~73	~73	~60	~73	~76	~74	~73	~74	~76	~77	
C.D. McIntosh, Jr.	GT2	GT	NG	1.34	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Reciprocating Engines	ME01-06	RICE	NG	N/A	N/A	N/A	N/A	-25	-20	-20	-20	-20	-20	-20	
Notes 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 2022
 Staff's Data Request # 1
 Question No. 69

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 2022
Staff's Data Request # 1
Question No. 70

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	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 2022
 Staff's Data Request # 1
 Question No. 71

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

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 74

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 expected to be impacted by this rule.

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 76

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	
McIntosh Gas Turbine #2	CT	Gas/Oil	117		X						
McIntosh Combined Cycle #5	CC	Gas	352		X						
Larsen Combined Cycle #8	CC	Gas/oil	106		X			X			
Notes											
ACE: Coal 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 a potential ACE rule replacement.											
CWIS: Larsen #8's operation may be limited to simple cycle only, dependent on the costs of CWIS compliance strategies.											

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 77

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
McIntosh Gas Turbine #2	CT	Gas/Oil	117		***					
McIntosh Combined Cycle #5	CC	Gas	352		***					
Larsen Combined Cycle #8	CC	Gas/oil	106		***			0.6*		
Notes										
*Larsen #8 - CWIS amount is dependent on the outcome of next permitting cycle and the engineering review of compliance strategies.										
***ACE: Coal 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 a potential ACE rule replacement.										

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 78

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
McIntosh Gas Turbine #2	CT	Gas/Oil	117		**					
McIntosh Combined Cycle #5	CC	Gas	352		**					
Larsen Combined Cycle #8	CC	Gas/Oil	106		**			*		
Notes										
*Larsen 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 a potential ACE rule replacement.										

TYSP Year 2022
 Staff's Data Request # 1
 Question No. 80

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU	GWh	\$/MMBTU
Actual	2012	0	N/A	759	4.3	2464	2.9715	0	19.84	0	22.82
	2013	0	N/A	786	3.99	2018	3.8937	0	19.19	0	24.48
	2014	0	N/A	278	3.59	1714	4.5299	0	20.22	0	26.18
	2015	0	N/A	788	3.32	2204	2.7164	0	12.32	0	17.04
	2016	0	N/A	805	3.16	1857	2.5385	0	10.75	0	15.72
	2017	0	N/A	846	2.78	1589	3.0504	0	9.34	0	12.92
	2018	0	N/A	969	2.76	2270	3.204	0	N/A	0	16.49
	2019	0	N/A	548	2.64	2382	2.75	0	N/A	0	16.6
	2020	0	N/A	385	2.45	2063	2.72	0	N/A	1	13.79
	2021	0	N/A	500	2.45	2259	3.89	0	N/A	0	15.15
Projected	2022	0	N/A	0	0	2940	6.70	0	N/A	4	13.57
	2023	0	N/A	0	0	3084	6.65	0	N/A	5	13.57
	2024	0	N/A	0	0	2662	4.57	0	N/A	3	13.57
	2025	0	N/A	0	0	3242	4.21	0	N/A	3	13.57
	2026	0	N/A	0	0	3302	4.16	0	N/A	1	13.66
	2027	0	N/A	0	0	3262	4.22	0	N/A	0	13.61
	2028	0	N/A	0	0	3134	4.30	0	N/A	0	13.78
	2029	0	N/A	0	0	3260	4.39	0	N/A	0	14.06
	2030	0	N/A	0	0	3239	4.38	0	N/A	0	14.11
	2031	0	N/A	0	0	3071	4.50	0	N/A	0	16.60
Notes											
(Include Notes Here)											