May 18, 2020

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

Re: 2020 Ten Year Site Plan 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 2020 Ten Year Site Plan Data Request #1 via the Commissions electronic platform.

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

Sincerely,

Cynthia Clemmons
City of Lakeland
Manager of Legislative and Regulatory Relations
Lakeland Electric
863-834-6595 Work
Cindy.Clemmons@LakelandElectric.com
501 E Lemon St.
Lakeland, Florida 33801

Enclosure

General Items

1. Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the period 2020-2029 (current planning period) in PDF format.
   Previously submitted.

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

3. Please refer to the Microsoft Excel document accompanying this data request titled "Data Request #1 – Excel Tables," (Excel Tables Spreadsheet). Please provide, in Microsoft Excel format, all data requested in the Excel Tables Spreadsheet for those sheets/tabs identified as associated with this question. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.

TYSP Year 2020
Staff's Data Request # 1
Question No. 3

Existing Generating Unit Operating Performance

Plant Name	Unit No.	Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
		Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Charles Larsen Memorial	GT2	0.00	4.00	100.00	5.00	0.00	90	N/A	18
Charles Larsen Memorial	GT3	2.12	4.00	43.00	5.00	88.00	95	40.6*	18
Charles Larsen Memorial	8	9.44	8.00	0.36	5.00	91.00	95	15.00	13
Charles Larsen Memorial	8	9.70	8.00	0.67	5.00	90.00	95	N/A	N/A
Winston Peaking Station	1-20	0.01	4.00	0.80	5.00	95.00	99	N/A	10
C.D. McIntosh, Jr.	D1	1.08	4.00	5.00	5.00	94.00	99	15.20	15
C.D. McIntosh, Jr.	D2	1.26	4.00	1.33	5.00	98.00	99	15.40	15
C.D. McIntosh, Jr.	GT1	1.05	4.00	30.00	5.00	97.00	99	17.60	15
C.D. McIntosh, Jr.	2	0.41	8.00	90.00	5.00	10.00	90	N/A	13
C.D. McIntosh, Jr.[1]	3	19.43	12.00	2.83	5.00	75.00	95	11.50	11
C.D. McIntosh, Jr.	5	11.82	8.00	7.10	5.00	81.00	95	11.20	11
C.D. McIntosh, Jr.	5	11.68	8.00	6.83	5.00	81.00	95	N/A	N/A

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

* The high net heat rate is very low net generation and station service consumption was very high.

TYSP Year 2020
Staff's Data Request # 1
Question No. 3
NONE

Nominal, Firm Purchases

Year	Firm Purchases $/MWh	Escalation %
HISTORY:	NONE	
2017		
2018		
2019		
FORECAST:	NONE	
2020		
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		

TYSP Year	2020
Staff's Data Request #	1
Question No.	3

Financial Assumptions
Base Case

AFUDC RATE	4.5	%	
CAPITALIZATION RATIOS:			
DEBT	100	%	
PREFERRED		%	
EQUITY	0	%	LE is a municipal utility: no true equity
RATE OF RETURN			
DEBT	3.32	%	This is LE's average interest rate.
PREFERRED	N/A	%	Municipal Utility
EQUITY	N/A	%	Municipal Utility
INCOME TAX RATE:			
STATE	0	%	
FEDERAL	0	%	
EFFECTIVE	0	%	
OTHER TAX RATE:	0	%	
DISCOUNT RATE:	3.5	%	
TAX			
DEPRECIATION RATE:	3.1	%	

TYSP Year	2020
Staff's Data Request #	1
Question No.	3

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
2020	1.7	3.5	2.0	2.0
2021	1.7	3.5	2.0	2.0
2022	1.7	3.5	2.0	2.0
2023	1.7	3.5	2.0	2.0
2024	1.7	3.5	2.0	2.0
2025	1.7	3.5	2.0	2.0
2026	1.7	3.5	2.0	2.0
2027	1.7	3.5	2.0	2.0
2028	1.7	3.5	2.0	2.0
2029	1.7	3.5	2.0	2.0

TYSP Year	2020
Staff's Data Request #	1
Question No.	3

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

Year	Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2020	N/A	31	N/A	0.1	31	52
2021		30			30	0
2022		29			29	3
2023		28			28	0
2024		27			27	4
2025		26			26	0
2026		26			26	7
2027		25			25	31
2028		23			23	13
2029		22			22	0

Note: Lakeland Electric is not operated in isolation hence LOLP andEUE numbers are not applicable.
* Planned system reliability for FMPP BA
N/A - Not applicable.

Environmental Compliance Costs

4. Please explain if the Company assumes CO_2 compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative:

   No.

   a. Please identify the year during the current planning period in which CO_2 compliance costs are first assumed to have a non-zero value.
   b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of CO_2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.
   c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no CO_2 compliance costs.

Flood Mitigation

5. 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.

Load & Demand Forecasting

6. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time.

N/A

7. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the monthly peak demand experienced during the three-year period prior to the current planning period, including the actual peak demand experienced, the amount of demand response activated during the peak, and the estimated total peak if demand response had not been activated. Please also provide the day, hour, and system-average temperature at the time of each monthly peak.

TYSP Year	2020
Staff's Data Request #	1
Question No.	7

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2019	1	545	0	684	29	8	51
	2	486	0	581	22	17	83
	3	496	0	498	11	18	81
	4	535	0	546	30	18	84
	5	636	0	602	30	17	95
	6	667	0	628	25	17	96
	7	647	0	645	16	17	92
	8	632	0	638	26	17	92
	9	647	0	609	9	17	95
	10	582	0	572	4	17	92
	11	521	0	469	7	16	87
	12	436	0	510	19	8	45
2018	1	701	0	677	*	*	*
	2	486	0	576	*	*	*
	3	454	0	492	*	*	*
	4	513	0	541	*	*	*
	5	579	0	596	*	*	*
	6	623	0	623	*	*	*
	7	625	0	639	*	*	*
	8	634	0	633	*	*	*
	9	639	0	603	*	*	*
	10	608	0	568	*	*	*
	11	522	0	465	*	*	*
	12	503	0	505	*	*	*
2017	1	534	0	677	*	*	*
	2	459	0	570	*	*	*
	3	498	0	478	*	*	*
	4	586	0	537	*	*	*
	5	610	0	595	*	*	*
	6	615	0	624	*	*	*
	7	644	0	641	*	*	*
	8	640	0	635	*	*	*
	9	618	0	605	*	*	*
	10	591	0	568	*	*	*
	11	461	0	458	*	*	*
	12	515	0	498	*	*	*

Notes * Will be provided by June 22, 2020.

(Include Notes Here)

8. Please identify the weather station(s) used for calculation of the system-wide temperature for the Company's service territory. If more than one weather station is utilized, please describe how a system-wide average is calculated.
   Answer will be submitted by June 22, 2020.

9. Please explain, to the extent not addressed in the Company's current planning period TYSP, how the reported forecasts of the number of customers, demand, and total retail energy sales were developed. In your response, please include the following information: methodology, assumptions, data sources, third-party consultant(s) involved, anticipated forecast accuracy, and any difference/improvement made compared with those forecasts used in the Company's most recent prior TYSP.
   Answer will be submitted by June 22, 2020.

10. Please identify all closed and open Florida Public Service Commission (FPSC) dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's current planning period TYSP.
    Answer will be submitted by June 22, 2020.

11. Please explain if your Company evaluates the accuracy of its forecasts of customer growth and annual retail energy sales presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.
    Answer will be submitted by June 22, 2020.

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

12. Please explain if your Company evaluates the accuracy of its forecasts of Summer/Winter Peak Energy Demand presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.
    Answer will be submitted by June 22, 2020.

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

13. Please explain any historic and forecasted trends in:
    Answer will be submitted by June 22, 2020.

    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.

    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.

    c. **Total Billed Retail Energy Sales** (GWh) **[for FPL]**, or
    Net Energy for Load (GWh) **[for other companies]**, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends. Please include a detailed discussion of how the Company's demand management program(s) and conservation/energy-efficiency program(s) impact the growth/decline of the trends.

14. Please explain any historic and forecasted trends in each of the following components of Summer/Winter Peak Demand:
    Answer will be submitted by June 22, 2020.

    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.

    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.

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

    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.

15. Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the Company's Summer/Winter Peak Energy Demand.
    Answer will be submitted by June 22, 2020.

16. Please refer to the Company's respective Utility Perspective section in the Commission's "Review of the 2019 Ten-Year Site Plans of Florida's Electric Utilities." Please answer your Company's respective questions below regarding the growth of customers and retail energy sales, of which the associated figure in the Utility Perspective section is based on the values reported on Schedule 2 of your respective Company's 2019 TYSP:

FPL:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012 and the decline in the growth rate in 2017, respectively.

DEF:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the projected decline in the growth rate in 2019, respectively.

TECO:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy in 2011.

GPC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the increase in the growth rate in 2018, respectively.

GRU:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please identify the drivers which contribute to the sharp fall in the growth of retail energy sales in the period 2011-2014 and the decline in the growth rate in 2017, respectively.

JEA:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please explain why the divergence in the growth rates of customers and retail energy sales increase during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, and the decline in the growth rate in 2017, respectively.

LAK:

Answer will be submitted by June 22, 2020.

a. Please explain, in general, why the Company's growth rate of retail energy sales is projected to lag the growth rate of customers starting in 2020.

b. Please explain why the divergence in the growth rates of customers and the retail energy sales is projected to increase during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012, and the relatively high growth rates in 2015 and 2018, respectively.

OUC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.

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

SEC:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.

b. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2014, and the decline in the growth rate in 2017, respectively.

TAL:

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.

b. Please explain why the divergence in the growth rates of customers and retail energy sales is projected to increase during the forecast period.

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2013, and the decline in the growth rate in 2017, respectively.

17. **[Investor-Owned Utilities Only]** If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:
    a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    d. Schedule 3.1 - History and Forecast of Summer Peak Demand.
    e. Schedule 3.2 - History and Forecast of Winter Peak Demand.
    f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.
    g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

    N/A

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?

    Lakeland Electric did not include plug-in electric vehicle loads in its demand and energy forecasts due to low level of market penetration in Lakeland's service territory.

    Lakeland will continue to monitor available data on plug in electric vehicle registrations and will consider creating an electric vehicle forecast when a threshold of at least 1% of total registered vehicles is reached.

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.

    For 2020 estimate, Lakeland Electric requested and aggregated DMV data for Polk County by PEV vehicle model. The estimate of PEVs for the Lakeland Electric Service area is based on the ratio of estimated Lakeland Electric Service area population to Polk County population.

    Lakeland Electric has not developed a methodology to estimate cumulative impact on system demand and energy consumption yet due to low penetration of electric vehicles in its service territory.

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

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

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public "Quick-charge" PEV Charging Stations	Cumulative Impact of PEVs		
				Summer Demand (MW)	Winter Demand (MW)	Annual Energy (GWh)
2020	285	14	0	*	*	*
2021						
2022						
2023						
2024						
2025						
2026						
2027						
2028						
2029						

Notes: 4/1/2020 Charging Station data from WWW.PLUGSHARE.COM

* Insignificant Impact

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

a. Of these programs or tariffs, are any designed for or do they include educating customers on electricity as a transportation fuel?
b. Does the Company have any programs where customers can express their interest or expectations for electric vehicle infrastructure as provided for by the Utility, and if so, please describe in detail.

Lakeland Electric doesn't have any current programs or tariffs for PEV customers, since there aren't enough to have any significance on the grid. When we have enough PEV customers we will put in place a tariff involving a time-of-use aspect.

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

Lakeland Electric does not monitor installations of public PEV charging stations in our service territory that the utility doesn't install, but we do keep track of how many there are.

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.

There were no instances where PEVs were a contributing factor in distribution system planning.

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.

Lakeland Electric hasn't conducted or contracted any research on PEVs, but we have reviewed the research of other utilities to set up a "best practices" when the PEV count reaches a significant level.

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?

Lakeland Electric currently doesn't have any processes or technologies in place to know when a PEV charging station is installed.

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

N/A

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

N/A

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

Generation & Transmission

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	29

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
					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	0.19
Charles Larsen Memorial	8	Polk	CA	WH	4	1956	29	31	29	31	29	31	16.24
Charles Larsen Memorial	8	Polk	CT	NG	7	1992	78	95	76	93	76	93	15.21
Winston Peaking Station	1-20	Polk	IC	DFO	12	2001	50	50	50	50	50	50	0.12
C.D. McIntosh, Jr.	D1	Polk	IC	DFO	1	1970	2.5	2.5	2.5	2.5	2.5	2.5	0.07
C.D. McIntosh, Jr.	D2	Polk	IC	DFO	1	1970	2.5	2.5	2.5	2.5	2.5	2.5	0.08
C.D. McIntosh, Jr.	GT1	Polk	GT	NG	5	1973	17	19	16	19	16	19	0.14
C.D. McIntosh, Jr.	2	Polk	ST	NG	6	1976	114	114	106	106	106	106	0
C.D. McIntosh, Jr.[1]	3	Polk	ST	BIT	9	1982	219	219	205	205	205	205	32.92
C.D. McIntosh, Jr.	5	Polk	CT	NG	5	2001	219	239	213	233	213	233	66.42
C.D. McIntosh, Jr.	5	Polk	CA	WH	5	2002	126	121	125	121	125	121	76.57

Notes

1. Lakeland's 60 percent portion of joint ownership with Orlando Utilities

2. Unit Type
CA Combined Cycle Steam Part
CT Combined Cycle Combustion Turbine
GT Combustion Gas Turbine
ST Steam Turbine

3 Primary Fuel
DFO Distillate Fuel Oil
RFO Residual Fuel Oil
BIT Bitumminous Coal
WH Waste Heat
NG Natural Gas

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

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

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
C.D. McIntosh Power Plant	Gas Turbine #2	Polk County	CT	NG	APRIL	2020	117	127	115	125	115	125	2

Notes
(Include Notes Here)

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

TYSP Year 2020
Staff's Data Request # 1
Question No. 31
NONE

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	(%)
NONE													

Notes
(Include Notes Here)

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

NONE

TYSP Year 2020
Staff's Data Request # 1
Question No. 32
NONE

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	(%)
NONE													

Notes
(Include Notes Here)

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

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

NONE

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

NONE -

TYSP Year 2020
Staff's Data Request # 1
Question No. 34
NONE

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
NONE													

Notes
(Include Notes Here)

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

NONE –

TYSP Year 2020
Staff's Data Request # 1
Question No. 35
No Planned PPA

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

Notes
(Include Notes Here)

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

36. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the

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

TYSP Year 2020
Staff's Data Request # 1
Question No. 36

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
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	Apr-10	Mar-30
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	Dec-11	Nov-36
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	Sep-12	Aug-37
TerraForm Power, LLC	Sutton	n/a	Lakeland, Polk County, Fl	PV	Sunlight	6	6	6	6	6	6	Jul-15	Jul-40
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	Dec-16	Nov-41
PosiGen	Solar Water Heating	n/a	Lakeland, Polk County, Fl	Therma l	Sunlight	0.532	0.532	0.532	0.532	0.532	0.532	2009	2029
Notes													
(Include Notes Here)													

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

NONE –

TYSP Year 2020
Staff's Data Request # 1
Question No. 37
NONE

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
NONE													
Notes													
(Include Notes Here)													

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

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

No such contracts have been cancelled, delayed, or reduced in scope.

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

NONE –

TYSP Year 2020
Staff's Data Request # 1
Question No. 39
NONE

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
NONE													

Notes
(Include Notes Here)

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

NONE –

TYSP Year 2020
Staff's Data Request # 1
Question No. 40
NONE

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
NONE													

Notes
(Include Notes Here)

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

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

NONE

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	42

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Utility - Firm	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	28	28	28	28	28	28	28	28	28	28	28
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	0.312	0.371	0.43	0.489	0.548	0.607	0.666	0.725	0.784	0.843	0.902
Total	28.312										
Notes											
(Include Notes Here)											

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

    N/A

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

    Lakeland Electric has multiple utility owned solar installations and has plans to possibly install another one in the near future. Also, we are looking at having a battery storage rebate for non-utility solar installations. We occasionally hold meetings with current solar, soon to be solar, and interested in solar customers to explain the solar rate and what concerns they have.

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

    N/A

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

    Lakeland Electric considers half of the grid scale solar PPA amount to contribute to summer resources that offset summer peak load and zero percent to contribute to winter. This is based on historical firm energy available from grid-connected solar PV during the seasonal peak load hour in last few years.

    Lakeland Electric does not consider any of the customer owned (rooftop) solar to offset load in either summer or winter.

LE developed the seasonal grid scale contribution percentages by analyzing the actual minimum solar energy available during the peak load hours in the past years. This is consistent with the numbers other utilities in Florida have used.

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

Flow batteries have emerged as major candidates in the development of large-scale battery storage. These battery technologies have long cycle life, 100% depth of discharge and no capacity degradation. As a result, it is suitable for frequent cycling to maintain secondary response for varying renewable resources. Also, flow batteries typically have low sensitivity on ambient temperatures, and they have a life cycles greater than 10,000. For these applications, flow batteries will have competitive advantage over lithium-ion batteries in the long run.

The cost has about 50% premium over lithium-ion batteries as of now. But this technology is in the early deployment and is in the industry's main focus for rapid growth in terms of research and development

There is 200 MW, 800 MWh size flow batteries being developed by Rongke Power in China, and if successful – it can provide a flexible energy storage resources in the future for the electric industry. Lithium-ion batteries remain the technology of choice to date, according to Bloomberg. But vanadium redox flow battery companies have promised significant cost reductions compared to lithium-ion competitors.

Cell Cube Energy Storage Systems, Inc., a Canada-listed maker of batteries system predicts they can last for as long as two decades and cost may halve within for years, potentially boosting its uptake over lithium-ion units.

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

Flow batteries have emerged as major candidates in the development of large-scale battery storage. These battery technologies have long cycle life, 100% depth of discharge and no capacity degradation. As a result, it is suitable for frequent cycling to maintain secondary response for varying renewable resources. Also, flow batteries typically have low sensitivity on ambient temperatures, and they have a life cycles greater than 10,000. For these applications, flow batteries will have competitive advantage over lithium-ion batteries in the long run.

The cost has about 50% premium over lithium-ion batteries as of now. But this technology is in the early deployment and is in the industry's main focus for rapid growth in terms of research and development

There is 200 MW, 800 MWh size flow batteries being developed by Rongke Power in China, and if successful – it can provide a flexible energy storage resources in the future for the electric industry. Lithium-ion batteries remain the technology of choice to date,

according to Bloomberg. But vanadium redox flow battery companies have promised significant cost reductions compared to lithium-ion competitors.

Cell Cube Energy Storage Systems, Inc., a Canada-listed maker of batteries system predicts they can last for as long as two decades and cost may halve within for years, potentially boosting its uptake over lithium-ion units.

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

Lakeland has one 40kwh pilot battery storage system. The site of this battery storage system was selected based on customer peak and duration of peak load that this system will serve.

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

Interest in energy storage technologies has been expressed by a limited number of customers. LE is weighing possible options to address this interest.

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	51

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
Lakeland Electric Battery Project	Y	Oct-17	0.006	0.0388	95.7%*
Notes * Inverter Efficiency					
(Include Notes Here)					

52. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all energy storage

technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

NONE -

TYSP Year	2020
Staff's Data Request #	1
Question No.	52

NONE

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 (%)
NONE					

Notes
(Include Notes Here)

53. Please identify and describe the objectives and methodologies of all energy storage pilot programs currently running or in development with an anticipated launch date within the current planning period. If the Company is not currently participating in or developing energy storage pilot programs, has it considered doing so? If not, please explain.
    a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.
        The storage project under study in Lakeland Electric is smaller than 1 MW.

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

    c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.
        Not yet decided since the pilot project is small and we are still collecting data.

54. If the Company utilizes non-firm generation sources in its system portfolio, please detail whether it currently utilizes or has considered utilizing energy storage technologies to provide firm capacity from such generation sources. If not, please explain.
    a. Based on the Company's operational experience, please discuss to what extent energy storage technologies can be used to provide firm capacity from non-firm generation

sources. As part of your response, please discuss any operational challenges faced and potential solutions to these challenges.

LE has about 15 MW of non-firm solar contract, and it is conducting a small demonstration project of 40 kWh. If storage project provides high energy and capacity value, LE may consider utilizing more storage technologies in the future.

55. Please identify and describe any programs the Company offers that allows its customers to contribute towards the funding of specific renewable projects, such as community solar programs.
    a. Please describe any such programs in development with an anticipated launch date within the current planning period.

    Lakeland Electric currently does not have any programs like community solar that customers can be part of, but we are actively looking to set up a community solar program.

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

    N/A

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

    N/A

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	58

Generating Unit Name	Summer Capacity (MW)	Certification Dates (if Applicable)		In-Service Date (MM/YY)
		Need Approved (Commission)	PPSA Certified	
Nuclear Unit Additions				
Combustion Turbine Unit Additions				
McIntosh Gas Turbine #2	117	Lakeland City Commission	7/23/2018	06/2020*
Combined Cycle Unit Additions				
Steam Turbine Unit Additions				
Notes				
* Expected to be in service.				

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

    No planned generating units.

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

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

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Charles Larsen Memorial	GT2	GT	NG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Charles Larsen Memorial	GT3	GT	NG	0.19	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Charles Larsen Memorial	8	CA	WH	16.24	14.26	5.00	4.00	2.00	3.00	2.00	2.00	1.00	5.00	2.00
Charles Larsen Memorial	8	CT	NG	15.21	14.26	5.00	4.00	2.00	3.00	2.00	2.00	1.00	5.00	2.00
Winston Peaking Station	1-20	IC	DFO	0.12	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C.D. McIntosh, Jr.	D1	IC	DFO	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C.D. McIntosh, Jr.	D2	IC	DFO	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C.D. McIntosh, Jr.	GT1	GT	NG	0.14	0.02	0.00	2.00	1.45	0.00	0.00	0.00	0.00	0.00	0.00
C.D. McIntosh, Jr.	2	ST	NG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C.D. McIntosh, Jr.[1]	3	ST	BIT	32.92	26.00	32.00	29.00	38.00	40.00	30.00	48.00	45.00	55.00	57.00
C.D. McIntosh, Jr.	5	CT	NG	66.42	85.00	89.00	92.00	89.00	87.00	84.00	75.00	69.00	61.00	58.00
C.D. McIntosh, Jr.	5	CA	WH	76.57	85.00	89.00	92.00	89.00	87.00	84.00	75.00	69.00	61.00	58.00
C.D. McIntosh, Jr.	GT2	GT	NG	N/A	0.01	0.00	0.00	1.39	1.24	1.31	1.30	1.50	1.13	2.31
Notes														
(Include Notes Here)														

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

    N/A

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

TYSP Year	2020
Staff's Data Request #	1
Question No.	62
NONE	

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
NONE					
Notes					
(Include Notes Here)					

Lakeland Electric does not have any plan for repowering any of the steam units into Combined Cycle Unit.

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

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

NONE

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
NONE					
Notes					
(Include Notes Here)					

Lakeland Electric does not have any plan for fuel-switching.

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

NONE –

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

NONE

	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
NONE					
Notes					
(Include Notes Here)					

Environmental

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

The Steam Electric Power Effluent Limitation Guidelines (ELG) approved in November 2015 has recently been stayed by the US EPA. This rule impacted coal burning units. In

addition to the stay, EPA has announced plans to reconsider the rule with additional rulemaking. The proposed rulemaking has included off ramps for those facilities that have plans for shuttering in the next couple years. Final impacts will not be known completely until the rule is finalized.

The Cooling Water Intake Structures Rule (CWIS) Rule affects units that use surface water for cooling purposes. Two of our units are affected by this rule. Unit 2 has not used surface water for cooling for a number of years and is not planned for use anytime in the near future. However, Unit 8 will feel impacts by this rule. As long as Unit 8's capacity factor remains below 8% over a 24-month rolling period, the impacts are minimal. Once the capacity factor exceeds 8%, an intensive ecological study must be endeavored. At the end of the study, it is quite likely the traveling screens on the intake structures must be upgraded to meet stricter standards. The upgraded traveling screens are estimated to cost several million dollars. One alternative to purchasing the upgraded screens 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. We are in the midst of determining the nature and extent of groundwater impacts around the byproduct storage area. Final impacts of the rule will not be known until the nature and extent of groundwater impacts are fully understood.

66. For the U.S. EPA's Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units Rule:

a. Will your Company be materially affected by the rule?

Future of the existing (2015) NSPS GHG rule is uncertain due to recent actions by current EPA administration. A revised NSPS GHG Rule was proposed in December 2018. LE is, however, not planning to add any new units that would be subject to either the final (2015) or proposed (2018) NSPS GHG rule.

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? Please complete and return, in Microsoft Excel format, the table associated

with this question found in the Excel Tables Spreadsheet by providing information on the costs for the current planning period.

N/A –

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

N/A

Year	Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (Present-Year $ millions)			
	Capital Costs	O&M Costs	Fuel Costs	Total Costs
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
Notes N/A				
(Include Notes Here)				

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

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

a. Mercury and Air Toxics Standards (MATS) Rule.
No reliability impact expected.

b. Cross-State Air Pollution Rule (CSAPR).
No reliability impact expected.

c. Cooling Water Intake Structures (CWIS) Rule.
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 no significant change 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.
No reliability impact expected.

g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.
No reliability impact expected.

68. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment,

installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

TYSP Year 2020
Staff's Data Request # 1
Question No. 68

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE	MATS	CSAPR/ CAIR	CWIS	CCR Non-Hazardous Waste	CCR Special Waste
2	steam	gas/oil	106			X		X		
3	steam	coal/gas	342	X	X	X			X	X
5	CC	gas	338							
8	CC	gas/oil	105					X		

Notes
ACE: Unit 3 will potentially be subject to the rule but no operational impacts are expected.
MATS: Unit 3 had to have its scrubber upgraded (2015) to be able to comply with the rule. Unit 2, in order to be exempt from MATS, cannot have its heat input from oil be greater than 10% (3-year average) or 15% (1-year average).
CWIS: Unit 8's operation may be limited to simple cycle only, dependent on the costs of CWIS compliance strategies.
ELG: Unit 3 will be potentially subject to the rule, but no operational impacts are expected.

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

TYSP Year 2020
Staff's Data Request # 1
Question No. 69

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR $ millions)						
				ELGS	ACE	MATS	CSAPR/ CAIR	CWIS	CCR Non-Hazardous Waste	CCR Special Waste
2	steam	gas/oil	106							
3	steam	coal/gas	342						0.55	0.1
5	CC	gas	338							
8	CC	gas/oil	105					1.0*		

Notes
Unit 8 - CWIS amount is dependent on the outcome of next permitting cycle.

70. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to

retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

TYSP Year	2020
Staff's Data Request #	1
Question No.	70

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)						
				ELGS	ACE	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
2	steam	gas/oil	106							
3	steam	coal/gas	342							
5	CC	gas	338							
8	CC	gas/oil	105					*		

Notes

Unit 8's operation may be limited due to CWIS (316(b)) rule – requirements are considerably less stringent if capacity factor remains below 8%. If changes are needed, they will be combined with planned outages for implementation.

71. If applicable, identify any currently approved costs for environmental compliance investments made by your Company, including but not limited to renewable energy or energy efficiency measures, which would mitigate the need for future investments to comply with recently finalized or proposed EPA regulations. Briefly describe the nature of these investments and identify which rule(s) they are intended to address.

    None.

Fuel Supply & Transportation

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

Year		Uranium		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2010	0	N/A	843	3.42	1826	5.2219	0	13.83	5	14.52
	2011	0	N/A	821	3.93	2346	4.3218	0	17.69	0	20.59
	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
Projected	2020	0	N/A	460	2.45	2624	2.61	0	N/A	2	22.61
	2021	0	N/A	562	2.57	2717	2.76	0	N/A	1	22.68
	2022	0	N/A	510	2.57	2798	2.77	0	N/A	2	23.52
	2023	0	N/A	684	2.57	2684	2.95	0	N/A	1	24.39
	2024	0	N/A	724	2.57	2651	3.12	0	N/A	1	25.29
	2025	0	N/A	526	2.54	2533	3.25	0	N/A	2	26.23
	2026	0	N/A	399	2.54	2253	3.36	0	N/A	2	27.2
	2027	0	N/A	307	2.54	2358	3.48	0	N/A	1	28.2
	2028	0	N/A	979	2.54	2070	3.60	0	N/A	2	29.25
	2029	0	N/A	1003	2.54	1767	3.72	0	N/A	1	30.33
Notes											
(Include Notes Here)											

73. 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 a Woods Mackenzie, EVA, and government forecasts from the EIA. Additionally, examination and comparison of the NYMEX Henry Hub futures market in comparison to those figures is conducted. These are industry standard practices to follow in preparation of long-range forecasts.

74. Please identify and discuss expected industry trends and factors for each fuel type listed below that may affect the Company during the current planning period.

    a. Coal

    Coal suppliers, along with other businesses during the pandemic, are expected to dwindle in numbers. This may have the affect of making coal prices higher due to reduced supply despite lessening competition for the fuel between utilities.

    b. Natural Gas

    Natural gas prices have been low for some time now, and the low prices have been exacerbated by the reduction in use brought about by the pandemic. Supply has greatly exceeded demand, reducing the prices at times into lows not experienced since the 1990's. Because modern drill rigs are efficient, reductions in rig counts have not yet corrected the pricing to more normal levels. Market expectations are for prices to rise in 2021.

    c. Nuclear

    Nuclear costs have remained stable.

    d. Fuel Oil

    Fuel oil prices have been greatly reduced but are not yet to the point where they would supplant coal or natural gas on an economic basis. Reduced loads due to the pandemic in combination with oversupply by the Russians and Saudi Arabia are

keeping the prices low. This should act to keep prices lower for the next several months, especially when considering that economic circumstances will not return to pre-pandemic levels in the next several months.

e. Other (please specify each, if any)
N/A

75. 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 two (2) separate pipeline companies, Florida Gas Transmission Company 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.

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

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

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

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

LNG demand has dropped in recent months due to the low price of natural gas and low demand for the fuel. This may be only a relatively temporary affect on the pricing, but it currently means that demand for LNG is low. With the population of countries being "shut in", demand is much lower than if industries were operating as they had been prior to the pandemic.

78. 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.

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

Coal transportation does not produce the revenues it once did for railroads. Coal transportation, whether by rail or by water, adds a considerable amount to the cost of delivered coal. This will not change for the foreseeable future.

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

    Coal handling practices are not expected to change during the remainder of the use of coal by Lakeland Electric.

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

    N/A

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

    N/A