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May 1, 2025

VIA: ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Review of Tampa Electric Company's 2025 Ten-Year Site Plan
Staff's First Data Request (Nos. 3-82)
Undocketed 20250000-OT

Dear Mr. Teitzman:

Attached for filing are Tampa Electric Company's responses to Staff's First Data Request (Nos. 3-82) regarding the company's 2025 Ten-Year Site Plan, propounded on February 20, 2025.

Thank you for your assistance in connection with this matter.

Sincerely,

Malcolm N. Means

MNM/bml
Attachments
cc: Greg Davis (GDavis@psc.state.fl.us)
Phillip Ellis (PEllis@psc.state.fl.us)
TECO Regulatory Department

General Items

3. Please refer to the Excel Tables File tabs listed below. 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.

a. Excel Tables File (Financial Assumptions)
b. Excel Tables File (Financial Escalation)

Answer:

a. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1. Excel Tables. Final.xlsx", tab Q3(a)_Financial Assumptions.

b. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1. Excel Tables.Final.xlsx", tab Q3(b)_Financial Escalation.

Historic Load & Demand

4. [Investor-Owned Utilities Only] Please refer to the Excel Tables File (Hourly System Load). Complete the table by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank.

a. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time (March 10, 2024, to November 3, 2024).

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025TYSP - Data Request #1.Excel Tables Data Request #1.xlsx", tab Q4_HourlySystem Load.

a. Tampa Electric's Forecasting team receives the hourly system load data adjusted for Daylight Savings Time, except the generation. For the Spring Daylight Savings Time (March 10, 2024), there are 23 hours of data, with no data on Hour Ending 24. A zero hour is avoided by taking an average of the previous hour and the following hour to replace the zero on Hour Ending 24. For the Fall Daylight Savings Time (November 3, 2024), there are 25 hours of data. On the double hour, an average of the two hours is taken to replace that hour.

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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025TYSP - Data Request #1.Excel Tables Data Request #1.xlsx", tab Q5_HistoricPeak Demand.

Forecasted Load & Demand

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

Answer:

Tampa Electric is presently using National Oceanic and Atmospheric Administration's ("NOAA") Tampa International Airport weather station for calculation of the system-wide temperature of the utility's service territory.

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:

a. Methodology.

b. Assumptions.

c. Data sources.

d. Third-party consultant(s) involved.

e. Anticipated forecast accuracy.

f. Any difference/improvement(s) made compared with those forecasts used in the Company's most recent prior TYSP.

Answer:

a. Tampa Electric's customer demand and energy forecast methodology, as well as assumptions and sources, are explained in detail in Chapter II of the 2025 Ten Year Site Plan ("TYSP") on pages 8 through 21.

b. Appliance efficiencies are based on data provided by the U.S. Energy Information Administration ("EIA"). The economic assumptions used in the forecast models are derived from Moody's Analytics and the University of Florida's Bureau of Economic and Business Research ("BEBR").

c. Data sources include those listed above: EIA, Moody's, and BEBR, phosphate customer survey data, along with actual customer counts and billing data from our customer billing system.

d. A third-party consultant was not involved in the development of the forecasts reported in the 2025 TYSP.

e. As for anticipated forecast accuracy, the target is to be within +/- 1 percent.

f. There were no significant differences or improvements made within the 2025 TYSP compared to the 2024 TYSP.

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.

Answer:

Please see the dockets below for all open and closed FPSC dockets that were based on the same load forecast that is used in the company's current planning period Ten-year Site Plan:

20240172-EI – Storm Reserve Docket

20240001-EI-Fuel & Purchased Power Docket

20240007-EI-Environmental Cost Recovery Docket

20240002-EG- Conservation Cost Recovery Docket

20240010-EI- Storm Protection Plan Cost Recovery Docket

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

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

   b. If your response is negative, please explain.

Answer:

Yes, Tampa Electric does review the accuracy of its customer growth and retail energy sales forecasts.

a. The method used to review the accuracy of forecasts throughout time is referred to as an error fan. This approach is also used by the Florida Reliability Coordinating Council ("FRCC") in reviewing state forecast accuracy. Tampa Electric electronic attachment in MS Excel format containing, "(BS 156) Accuracy2025.xlsx."

b. Non-Applicable.

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

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

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

Answer:

Yes, Tampa Electric does review the accuracy of Summer/Winter peak demand forecasts.

a. The method used to review the accuracy of forecasts throughout time is referred to as an error fan. This approach is also used by the Florida Reliability Coordinating Council ("FRCC") in reviewing state forecast accuracy. Please refer to the provided Excel table containing "(BS 156) Accuracy2025.xlsx".

b. Non-Applicable.

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11. Please explain any historic trends or other information as requested below in each of the following components of Summer/Winter Peak Demand:

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

c. Total Demand, and identify the major factors 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 that contribute to the growth/decline in the trends.

Answer:

a. CONSERVATION AND SELF SERVICE: Residential conservation at the time of the summer peak has historically increased by an average of 6.9 MW a year. At the time of the winter peak, residential conservation historically increased by an average of 7.4 MW a year. The primary driver of this growth is the increasing number of participants in Tampa Electric's conservation programs. Commercial and Industrial conservation at the time of the summer peak has increased by an average of 8 MW a year. At the time of the winter peak, it historically increased by an average of 5.5 MW.

b. DEMAND RESPONSE / LOAD MANAGEMENT: In 2022, a new residential Prime Time Plus program began. Combining Prime Time Plus and Energy Planner Programs, summer and winter demands have been relatively flat. Note that in the Ten-Year Site Plan's Schedules 3.1 and 3.2, these residential Load Management Programs are included in the Residential Conservation column due to the participants' ability to override the load control. Commercial and Industrial load management and demand response at the time of the summer peak have increased on average by 1 MW a year. This trend is primarily due to no changes in the number of customers participating in the Standby Generator program.

Commercial and Industrial load management and demand response at the time of the winter peak have been relatively flat, however in 2024 it declined from 105 MW to 64 MW. This decline is primarily due to the winter peak occurring on a weekend and the company's Demand Response program is not available for curtailment on weekends.

c. TOTAL DEMAND: For this discussion, total demand (retail peaks) is equal to the sum of columns (5), (6), (8) and (10) in Schedules 3.1 and 3.2. Summer retail peaks historically increased on average by 34 MW a year (0.8 percent). The 2024 summer peak was 346 MW lower than the 2023 peak. The 2024 summer peak was a relatively normal weather peak, while 2023 had record-breaking hot temperatures at the time of the summer peak. Historically, winter retail peaks vary significantly due to very mild winters and occasional cold winters. The 2024 winter peak was a very mild peak, it was 262 MW lower than the 2023 winter peak. Customer growth is the primary driver behind the growth in summer and winter total peak demands.

d. NET FIRM DEMAND: Summer firm peaks historically increased on average by 38 MW a year (1.0 percent). Similar to the 2024 summer retail peak, the 2024 summer firm peak was also lower than the prior year's summer peak. Historically, winter firm peaks vary significantly due to very mild winters and occasional cold winters. Customer growth is the primary driver behind the growth in summer and winter firm peak demands.

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12. Please explain any current and forecasted trends or other information as requested below in each of the following components of Summer/Winter Peak Demand:

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

c. Total Demand, and identify the major factors 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 that contribute to the growth/decline in the trends.

Answer:

a. CONSERVATION AND SELF SERVICE: Residential conservation at the time of the summer peak increases by an average of 21 MW a year over the forecast horizon. At the time of the winter peak, residential conservation is projected to increase by an average of 18 MW a year. The primary driver of this growth is the increasing number of participants in Tampa Electric's conservation programs, primarily the new Prime Time Plus program that began in 2022. Commercial and Industrial conservation at the time of the summer peak increases by an average of 6.4 MW a year over the forecast horizon. At the time of the winter peak, it is projected to increase by 5.5 MW a year on average. Self-service is assumed to follow historical trends. If changes in self-service are known, forecasts will be adjusted, up or down.

b. DEMAND RESPONSE / LOAD MANAGEMENT: In 2022, a new residential Prime Time Plus program began. Combining Prime Time Plus and Energy Planner Programs, summer and winter are projected to increase by 10 MW and 11 MW, respectively. Note that in the Ten-Year Site Plan's Schedules 3.1 and 3.2, these residential Load Management Programs are included in the Residential Conservation column due to the participants' ability to override the load control. Commercial and Industrial load management and demand response at the time of the summer and winter peaks are projected

to remain relatively flat over the forecast horizon. This trend is primarily due to no changes in the number of customers participating in the Standby Generator program and no expected contractual changes in the Demand Response program.

c. TOTAL DEMAND: For this discussion, total demand (retail peaks) is equal to the sum of columns (5), (6), (8) and (10) in Schedules 3.1 and 3.2. Summer retail peaks are expected to increase by an average of 46 MW (1.0 percent) a year over the forecast horizon. Winter peaks are expected to increase by an average of 54 MW (1.1 percent) a year over the forecast horizon. Winter peaks increase at a slightly faster rate than summer peaks due to minimal impacts from rooftop solar at the time of winter peaks. Customer growth is the primary driver behind the growth in summer and winter total peak demands.

d. NET FIRM DEMAND: Summer firm peaks are expected to increase by an average of 45 MW (1.0 percent) a year over the forecast horizon. Winter firm peaks are expected to increase by an average of 54 MW (1.2 percent) a year over the forecast horizon. Customer growth is the primary driver behind the growth in summer and winter firm peak demands.

13. [FEECA Utilities Only] Do the Company's energy and demand savings amounts reflected on the DSM and Conservation-related portions of all energy and demand savings schedules (Schedules 2.1, 2.2, and 2.3 for energy savings and Schedules 3.1, 3.2, and 3.3 for demand savings) reflect the Company's goals that were approved by the Commission in the 2024 FEECA Goalsetting dockets? If not, please explain what assumptions are incorporated within those amounts, and why.

Answer:

No, the company's energy and demand savings amounts reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2 and 3.3 do not reflect the Company's proposed goals in the 2024 FEECA Goalsetting dockets.

Savings amounts reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2 and 3.3 reflect cumulative savings from all programs offered since 1981, whether they have been discontinued or not; and, do not include any new proposed programs that were filed within the 2024 FEECA Goalsetting docket due to the timing of the preparation of the annual forecast compared to the FEECA filing.

14. 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.

Answer:

a. Upon review of the company's summer peak demand for the ten years prior to the current planning period, there have been no anomalies caused by non-weather events.

b. Upon review of the company's winter peak demand for the ten years prior to the current planning period, there have been no anomalies caused by non-weather events.

c. Upon review of the company's annual retail energy sales for the ten years prior to the current planning period, there have been no anomalies caused by non-weather events.

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15. 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:

(1) How many years' historical weather data was used in developing each retail energy sales and peak demand model.

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

e. Please explain how the projected values of the input weather variables (that were used to forecast the future retail energy sales or demand outputs for each planning years 2025–2034) were derived/obtained for the respective retail energy sales and peak demand models.

Answer:

a. The Retail Energy Sales model uses monthly heating and cooling degree-days and monthly normal heating and cooling degree-days. The summer and winter peak demand models use historical and projected normal temperatures at the time of the monthly peaks, the actual 24-hour temperatures on the peak day and on the prior day.

b. The source of the weather data Tampa Electric uses is the National Oceanic and Atmospheric Administration (NOAA)'s Tampa International Airport (TIA) weather station for calculation of the system-wide temperature of the utility's service territory. The normal degree-days and normal temperature assumptions used in the models are based on historical data over the past 20 years.

c. As input to the Energy Sales models, Tampa Electric converts the daily average NOAA TIA dry bulb temperature into a daily degree-day using the 65-degree base to determine if it is a heating degree-day (less than 65-degree base) or cooling degree-day (greater than 65-degree base).

Calendar degree-days are converted to billing cycle degree-days by proportioning degree-days depending on how many billing cycles (i.e. cycle 1-21, 23) were billed during the billing period. In the Peak Demand models, dry bulb temperature data is also converted into a daily degree-day using the 65-degree base for the peak day and lag peak day variables. For the variable representing the weather at the time of the peak, heating degree-days are calculated using a 50-degree base and cooling degree-day is calculated using an 80-degree base.

d. (1) The Retail Energy Sales and Peak Demand models typically use 10 years of historical weather data for the estimation period.

(2) The Retail Energy Sales and Peak Demand models typically use 10 years of historical weather data for the models' calibration and/or validation period.

e. For the Energy Sales models, the projected values of the normal degree day variables are determined by a Monte Carlo simulation using 20 years of historical degree-day data. The monthly degree-days at the 50 percent probability were chosen to represent normal degree days.

For Peak Demand models, the projected values of the Normal Peak Day temperatures are determined using 20 years of history, except for January, which is based on the top 20 coldest peak days over the past 50 years.

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

a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.

b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.

c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.

d. Schedule 3.1 - History and Forecast of Summer Peak Demand.

e. Schedule 3.2 - History and Forecast of Winter Peak Demand.

f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.

g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

Answer:

The high and low band sensitivities are included in the current planning period TYSP, within Chapter IV, pages 32 through 52.

The methodology used to prepare load forecast sensitivities (high band, low band) for Schedules 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 and 4 is listed within the 2025 TYSP, Chapter II, page 20 under "High and Low Scenario Forecast Assumptions."

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a. Please see response above.

b. Please see response above.

c. Please see response above.

d. Please see response above.

e. Please see response above

f. Please see response above.

g. Please see response above.

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

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

b. Please provide the annual impact, if any, of customer's renewables and/or storage on the Utility's retail demand and energy forecasts, by class and in total, for 2025 through 2034.

c. If the Utility maintains a forecast for the planning horizon (2025-2034) of the number of customers with renewables and/or storage, by customer class, please provide.

Answer:

a. Tampa Electric's load forecasts account for the impact of customer-owned solar on energy and demand. Customer-owned solar forecasts are based on the historical number of PV installations and the average size of the PV systems installed in the service area. From this historical data, future penetration levels of PVs are based on assumptions used by the Energy Information Administration's (EIA) South Atlantic region. Since there were no new forecasts published by EIA during 2024, we used their prior year's forecast of growth in PV installations.

It is assumed Tampa Electric will no longer have to serve this portion of PV customers' load; therefore, the energy sales and demand forecasts are adjusted downward by the annual incremental change to incorporate the loss of this load. Tampa Electric load forecasts do not take into consideration energy storage devices as the impact is minimal currently.

b. Please refer to the chart below for the impact of customer renewables [no energy storage, only PV] on retail demand and energy forecasts by class and in total for 2025 through 2034.

c. Please refer to the chart below for the number of customers with renewables [no energy storage, only PV] by customer class and in total for 2025 through 2034.

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Tampa Electric Customer-Owned Solar/Photovoltaic [PV]

	CUSTOMERS			Cumulative INSTALLED MW_{AC}			Cumulative CONTRIBUTION AT SUMMER PEAK [MW_{AC}]			Cumulative PV ENERGY GENERATION [GWH]		
Year	Residential	Non-Residential	Total	Residential	Non-Residential	Total	Residential	Non-Residential	Total	Residential	Non-Residential	Total
2025	39,253	372	39,625	349.0	36.4	385.4	207.4	16.6	224.1	548.1	57.1	605.2
2026	45,731	383	46,114	407.0	38.0	445.0	223.3	17.3	240.6	639.2	59.6	698.8
2027	51,463	395	51,858	458.4	39.7	498.1	237.8	18.0	255.8	719.8	62.4	782.2
2028	56,425	406	56,831	502.8	41.3	544.1	252.7	18.6	271.3	791.8	65.0	856.8
2029	61,240	423	61,663	545.9	43.8	589.7	267.6	19.4	287.0	857.4	68.7	926.1
2030	65,892	435	66,327	587.6	45.5	633.1	282.7	20.3	303.0	922.8	71.5	994.3
2031	70,164	447	70,611	625.8	47.3	673.1	295.6	20.8	316.3	982.9	74.3	1,057.2
2032	74,538	458	74,996	665.0	48.9	713.9	308.4	21.8	330.2	1,047.3	76.9	1,124.2
2033	78,907	473	79,381	704.1	51.1	755.2	321.5	22.4	343.9	1,105.9	80.2	1,186.1
2034	83,339	490	83,829	743.8	53.5	797.3	335.0	23.2	358.3	1,168.2	84.0	1,252.2

Plug-in Electric Vehicles (PEVs)

18. Please refer to the Excel Tables File (PEV 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP - Data Request #1.Excel Tables Data Request #1.xlsx", tab Q18_Electric Vehicle Charging.

19. Please describe what method(s) the Utility has used, if any, to address the impact of PEVs charging on seasonal peak demand, including any special rates or tariffs, demand-side management programs (including PEV-centric demand response), customer education, or other means. As part of your response, identify each and provide the estimated impact on seasonal peak demand.

Answer:

To address the impact of PEVs charging on seasonal peak demand for forecasting purposes, we apply a capacity value assumption [percent contribution of EV load at the time of the peak] to the maximum estimated capacity for EV charging load, realizing there is diversity in charging. In other words, not everyone is charging their EVs at the same time. We calculate these values using the National Renewable Energy Laboratory's (NREL) weekday and weekend hourly profile data for the Tampa area based on the type of EV charging: Home, Workplace, Public, etc.

Tampa Electric currently has no special rates or tariffs for EV charging.

20. Please explain any historic trends related to the following:

a. PEV counts

b. PEV charging installation counts

c. Annual energy consumption

d. Seasonal Peak Demand (Summer and Winter)

Answer:

a. Over the past five years [2019-2023], PEV counts have been growing at an annual average of 48 percent, following a similar trend to Florida. However, TECO's service area and Florida's growth in PEV counts has started to moderate, growing at slightly lower rates each year.

b. Over the past five years, PEV charging installation counts have been growing at an annual average of 24 percent each year.

c. Annual energy consumption follows the same trend as PEV counts, growing at an annual average of 48 percent over the past five years.

d. Similar to PEV counts and energy consumption, the contribution of EV charging at the summer and winter peak has been growing at an annual average of 48 percent over the past five years.

21. Please explain any current or forecasted trends related to the following:

a. PEV counts

b. PEV charging installation counts

c. Annual energy consumption

d. Seasonal Peak Demand (Summer and Winter)

Answer:

a. The forecasted trend is for slower growth in PEV counts.

b. The forecasted trend is for slower growth in PEV charging installation counts.

c. The forecasted trend is for slower growth in annual energy consumption.

d. The forecasted trend is for slower growth in seasonal peak demands, both summer and winter.

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22. 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.

Answer:

Tampa Electric continues to be active in several activities and potential offerings of future programs or tariffs with plug-in electric vehicles.

In May 2017, Tampa Electric received Florida Public Service Commission approval to enhance the Energy Education, Awareness and Agency Outreach DSM Program by partnering with high schools' driver's education programs in the classroom. This portion of the program focuses on providing opportunities to encourage the conservation of energy and promote energy efficiency through local school systems by partnering with high schools' driver's education classes to provide in-class curriculum together with access to battery-electric vehicles and Level 2 (240V) charging. This program is available to each of the school districts served by Tampa Electric, however only one of the three districts is offering driver's education in this manner. The program currently remains on a temporary hold with the participating school district due to system-wide modifications and improvements under evaluation for their driver's education program. This includes the district's consideration that an effective and equitable program may need to include access to this type of education at all their high schools rather than being limited to a selected few.

Regarding future programs or tariffs related to PEVs, and due in part to the company's work delivering the Drive Smart program, Tampa Electric is learning more about potential opportunities to support customer adoption of PEVs and the necessary charging infrastructure. The company is evaluating the feasibility for providing programs and tariffs that include PEV-supportive rates and PEV charging programs or services, however the details for such potential programs or tariffs have not been fully developed nor has a determination been made as to the timing. Tampa Electric would follow established regulatory requirements for notifying the Commission of any new programs or tariffs related to PEVs. In

addition, the company has developed the next Technical Potential Study that will support the proposed DSM Goals and Programs for the 2025-2034 period. As part of this study, supporting EV technology has been evaluated as individual measures for this study which has led to offerings impacting EV's for Time of Use programs as well as for demand response programs. Incorporation of EV chargers into our Time of Use program, Energy Planner, will allow customers to both schedule their EV charger operation and avoid Critical Pricing during times of extremely high demand. Incorporation of EV chargers into our Demand Response program, Prime Time +Plus, will allow customers the benefit of receiving a monthly credit to their account while allowing Tampa Electric the ability to send Demand Response signals to the EV charger.

a. The driver's education portion of the Energy Education, Awareness and Agency Outreach DSM Program includes in-class curriculum to encourage the conservation of energy and promote energy efficiency as part of having access to battery-electric vehicles and Level 2 (240V) charging.

b. The company does not have a program where customers can express their interest or expectations for electric vehicle infrastructure.

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

Answer:

No, the company has not conducted or contracted research to determine demographic and regional factors that influence the adoption of PEVs applicable to its service territory.
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24. Please describe if and how the 2024 presidential election and the new administration has impacted the Company's projection of PEV growth and related demand and energy growth.

Answer:

The forecast provided in the 2025 TYSP was prepared during the summer of 2024, prior to the 2024 presidential election; so, the outcome of the election was not a factor in the preparation of the plug-in vehicle (PEV) forecast.

25. If applicable, please list and briefly describe all PEV pilot programs the Company is currently implementing and the status of each program.

Answer:

Tampa Electric is not currently implementing PEV pilot programs.

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

Answer:

Tampa Electric does not have active PEV pilot programs. The company's previous PEV pilot programs for public PEV charging (Drive Smart) and the rule variance for customer CIAC, did not reveal PEV impacts to the company's demand and energy requirements. Other key findings, if applicable, for those pilot programs would have been provided during each annual report.

Demand Response

27. [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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1.Excel Tables.Final.xlsx", tab Q27_DR Participation.

28. [FEECA Utilities Only] Please refer to the Excel Tables File (DR Annual Activation). 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1.Excel Tables.Final.xlsx", tab Q28_DR Activations.

Generation & Transmission

Utility-Owned Resources

29. Please refer to the Excel Tables File tabs listed below. Complete the tables by providing information on the utility-owned generation resources for the time period listed. When completing the tables, please consider the following factors: (i) for multiple small (<0.25 MW) distributed resources of the same type and fuel source, provide a single entry; (ii) for solar facilities, if available, provide the nameplate DC capacity as the gross capacity, the nameplate AC capacity as the net capacity, and the firm contribution during time of system peak as the firm capacity. If a solar facility is combined with an energy storage system, identify the capacity of the energy storage system in a separate line.

a. Excel Tables File (Existing Utility), including each utility-owned generation resource in service as of December 31 of the year prior to the current planning period.

b. Excel Tables File (Planned Utility), including each utility-owned generation resource that is planned to enter service during the current planning period.

Answer:

a. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1.Excel Tables.Final.xlsx", tab Q29(a)_Existing Utility.

b. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR 1.Excel Tables.Final.xlsx", tab Q29(b)_Planned Utility.

30. For each planned utility-owned generation resource or group of resources, provide a narrative response discussing the current status of the project.

Answer:

Cottonmouth and Long Branch Solar are currently under construction and should reach Commercial In-Service by December 2025. Keene Branch, Curiosity Creek, Brewster, and Mattaniah Solar are in permitting and are expected to reach Commercial In-Service by December 2026. All other solar sites are in various stages of development. Future sites are being evaluated and will be identified once the sites have been purchased.

31. 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?

Answer:

There have been no planned utility-owned renewable resources that have, within the past year, been cancelled, delayed, or reduced in scope.

32. Discuss the impact of any recent federal actions on permitting for renewable generation. As part of your discussion, identify what projects, if any, were impacted and what those impacts were.

Answer:

No recent federal actions on permitting for renewable generation have impacted current projects.

33. Please refer to the Excel Tables File (Planned PPSA). Complete the table by providing information on each planned generation resource that requires siting under the Power Plant Siting Act. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q33_ Planned PPSA.

34. Please refer to the Excel Tables File (Planned Construction). Complete the table by providing information on all planned generating units with an in-service date within the current planning period. For each planned unit, provide the final decision ("drop dead") date for a decision on whether or not to construct each unit, and the estimated dates for site selection, engineering, permitting, procurement, and construction.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q34_ Planned Construction.

35. Please refer to the Excel Tables File (Unit Performance). Complete the table by providing information on each utility-owned generation resource in service during the current planning period. For historic performance, use the past three years for a historical average. For projected performance, use an average of the next 10-year period for projected factors.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q35_Unit Performance.

36. Please refer to the Excel Tables File (Unit Dispatch). 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q36_ Unit Dispatch.

37. [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.

Answer:

Please refer to the 2025 Ten Year Site Plan, Chapter 1 Schedule 1, pages 4-5. Currently the company is depreciating its existing units in accordance with the remaining depreciable life approved in its most recent depreciation study.

38. [Investor-Owned Utilities Only] Please refer to the Excel Tables File (Solar and Storage Sites). Complete the table by providing information on each of the Company's existing and planned solar and/or energy storage facilities, including the Order and date of Commission approval (or Pending if not yet approved). Identify the associated cost recovery mechanism (such as in a base rate case, the environmental cost recovery clause, solar base rate adjustment, or special tariffs such as SolarTogether, SolarTogether Extension, and Clean Energy Connection) for each facility as well.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q38_ Solar and Storage Sites.

39. In its planning process, did the Company consider constructing any solar or energy storage facilities that are co-located with other uses such as parking areas, waterways, existing buildings (including rooftops), or substations? If not, explain why not. If so, explain whether the analysis selected any facilities of this type and identify them.

Answer:

Several sites were considered for co-location at substations. Tampa Electric decided to construct Bayside BES in 2025. Tampa Electric is also planning two additional energy storage facilities at Big Bend station and Pace Rd. Both will be co-located at existing substations. Tampa Electric has also considered parking areas, waterways, and rooftops of existing buildings for solar. However, these projects have not proven to be cost effective. Several small-scale solar projects have been constructed to study the viability of technologies and taking them to scale in the future. These include, solar carports at TIA, Legoland, Big Bend Parking lot, Big Bend floating solar, Eastern Operations parking lot, and our new Bearss Operations Center parking lot.

40. Please refer to the Excel Tables File (Unit Modifications). Complete the table by providing information on all of the Company's units that are either will or are potential candidates to change fuel types or be repower, such as conversion to a Combined Cycle unit component.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q40_Unit Modification.

41. 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q41_Unit Modification.

Power Purchase and/or Sale Agreements

42. Please refer to the Excel Tables File tabs listed below. Complete the tables by providing information on each power purchase agreement (PPA) for the time period listed. If the PPA is associated with a particular generating unit(s), provide additional information about those units if available. When completing the tables, please consider the following factors: (i) for multiple small (<0.25 MW) distributed resources of the same type and fuel source, provide a single entry; (ii) for solar facilities, if available, provide the nameplate DC capacity as the gross capacity, the nameplate AC capacity as the net capacity, and the firm contribution during time of system peak as the firm capacity. If a solar facility is combined with an energy storage system, identify the capacity of the energy storage system in a separate line.

a. Excel Tables File (Existing PPA), including each PPA 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.

b. Excel Tables File (Planned PPA), including each PPA pursuant to which energy will begin to be delivered to the Company during the current planning period.

Answer:

a. Tampa Electric has two (2) firm purchased power agreements with traditional generators still in effect December 31 of the year prior to the current planning period. Those agreements are call options and with the Florida Municipal Power Agency (FMPA) for 100 MW (December 2024 through February 2025) and Seminole Electric Cooperative for 200 MW (December 2024 through February 2025). The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q42a_Existing PPA.

b. Tampa Electric has five (5) firm purchased power agreements with traditional generators that can deliver energy to the company during the current planning period. In addition to the two (2) firm purchases noted in response to Request No. 42(a), Tampa Electric has a firm call option with the Orlando Utilities Commission (OUC) for 150 MW (January through February 2025) and a firm must-take energy purchase from the Pasco County Resource Recovery Facility (also referred to as the Pasco waste-to-energy facility). The Pasco purchase is for 18 MW (January 2025

through December 2034), and its use of municipal solid waste as fuel categorizes it in Florida as a renewable energy resource. Similarly, Tampa Electric also has a 16 MW firm must-take energy purchase from the Hillsborough County waste-to-energy facility. The purchase term is March 2025 through February 2035. However, the Hillsborough contract is pending Florida Public Service Commission approval. If approved, the contract will begin the first full month after approval, and the end date will remain the same. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q42b_Planned PPA.

43. For each planned power purchase agreement, provide a narrative response discussing the current status of the associated generating project.

Answer:

All generators associated with the five (5) firm purchased power agreements noted in response to Request No. 42(b) are from existing assets.

44. Please list and discuss any long-term power purchase agreements 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?

Answer:

Tampa Electric has no long-term purchased power agreement that has, within the past year, been cancelled, delayed, or reduced in scope.

45. Please refer to the Excel Tables File tabs listed below. Complete the tables by providing information on each power sale agreement (PSA) for the time period listed. If the PSA is associated with a particular generating unit(s), provide additional information about those units if available. When completing the tables, please consider the following factors: (i) for multiple small (<0.25 MW) distributed resources of the same type and fuel source, provide a single entry; (ii) for solar facilities, if available, provide the nameplate DC capacity as the gross capacity, the nameplate AC capacity as the net capacity, and the firm contribution during time of system peak as the firm capacity. If a solar facility is combined with an energy storage system, identify the capacity of the energy storage system in a separate line.

a. Excel Tables File (Existing PSA), including each PSA still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered by the Company during said year.

b. Excel Tables File (Planned PSA), including each PSA pursuant to which energy will begin to be delivered by the Company during the current planning period.

Answer:

a. As of December 31 of the year prior to the current planning period, Tampa Electric had one (1) power sale agreement. The sale is to Seminole Electric Cooperative (SEC) for up to 18 MW, but the capacity is non-firm. The agreement continues indefinitely unless terminated by either party with three years' prior notice. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q45a_Existing PSA.

b. Tampa Electric has but one (1) planned power sale agreement during the current planning period. The contract is the SEC sale noted in Response No. 45(a). The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q45b_Planned PSA.

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

Answer:

As noted in Response No 45, Tampa Electric has but one (1) power sale agreement. The sale is to Seminole Electric Cooperative (SEC) for up to 18 MW, but the capacity is non-firm. The agreement continues indefinitely unless terminated by either party with three years' prior notice.

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

Answer:

Tampa Electric had no long-term power sale agreements within the past year that were cancelled, expired, or modified.

48. Please refer to the Excel Tables File (Renewables). 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab "Q48_Renewables."

TAMPA ELECTRIC COMPANY
UNDOCKETED: REVIEW OF TYSP'S
STAFF'S FIRST DATA REQUEST
REQUEST NO. 49
BATES PAGE(S): 204-205
FILED: MAY 1, 2025

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

Answer:

As market conditions continue to change and technology improves, resiliency is top-of-mind for a growing number of customers, renewable alternatives like solar and battery storage have become more attractive. Between January 2024 and December 2024, with tax incentives and the incentive provided by the FPSC's net metering rule, over 4,200 customers installed solar panels on their homes or businesses, indicating the increasing acceptance of customer owned renewable generation. Through December 2024, more than 29,0000 customers installed PV systems on their homes or businesses, accounting for more than 345 MW DC of net metered, distributed solar generation interconnected on Tampa Electric's grid. Tampa Electric customers and contractors continue to experience the streamlined online interconnection application process that was implemented in 2018.

For over eighteen years, Tampa Electric's Renewable Energy Program has offered residential and commercial and industrial customers the opportunity to purchase 200 kWh renewable energy "blocks" for their home or business. The program also allows residential and commercial and industrial customers the opportunity to purchase renewable energy to power a specific event. This program enables a family, a business, or a venue to make a statement about their commitment to the environment and to renewable energy. The funds from this program build small, community-sited PV arrays at highly visible locations. These demonstration arrays are designed to educate students and the public on the benefits of renewable energy. Through December 2024 Tampa Electric's Renewable Energy Program has 1,009 customers purchasing over 1,754 blocks of renewable energy each month. The company's renewable-generation portfolio is a mix of various technologies and renewable generating sources, including smaller, company-owned photovoltaic (PV) arrays throughout the community and an increasing number of large-scale PV systems that provide ample solar kWh for the Renewable Energy Block Program. The smaller, community-sited PV arrays are installed at the Museum of Science and Industry ("MOSI"), Middleton High School, Tampa Electric's Manatee Viewing Center, Tampa's Lowry Park Zoo, the Florida Aquarium, LEGOLAND Florida's Imagination Zone, and at the Florida Conservation and Technology Center (FCTC), an environmental and energy education facility located in Apollo Beach. Solar trees that provide solar powered charging stations for small electronics (cell phones, tablets) were also installed at the Museum of Science and Industry (MOSI). MOSI and at a community organic farm on the edge of downtown Tampa. The Renewable Energy Program

installations are strategically located throughout the community and are designed to educate students and the public on the benefits of renewable energy. Educational signage touts the advantages of solar energy and interactive displays provide hands-on experience to engage visitors' interest in clean, renewable technologies.

Tampa Electric also installed PV integrated with battery storage picnic tables at the Manatee Viewing Center. These PV-topped structures have bench seating and table-tops equipped with charging ports for small electronics and each solar tree has solar energy education signage. In addition, Tampa Electric installed a solar "flower" at the Florida Conservation & Technology Center, which will further the encouragement of renewable energy.

The company received Commission approval to add renewable energy education to the company's existing Energy Education, Awareness and Agency Outreach Demand Side Management Program. Tampa Electric enhanced the company's website to provide more information to help customers make informed decisions on renewable energy and its benefits to encourage its further adoption. To ensure customers receive the best possible experience once they make the decision to install their own renewable energy system, Tampa Electric partnered with a third-party expert to design an energy education resource to assist customers in their quest for renewable energy. This resource went live on February 12, 2024.

In 2019, Tampa Electric launched a Shared Solar Program, called Sun Select, providing another choice for customers unable to install rooftop solar but prefer their energy generated from solar. Residential and small business customers can purchase locally generated solar power to match 25%, 50% or 100% of the electricity they use. Business and commercial customers can purchase solar in increments of 1,000 kWh. Sun Select participants pay a locked-in solar rate for the solar energy they purchase instead of paying the fuel charge for that portion of participants' electricity use. The energy is generated at Lake Hancock Solar, with 17.5 MW AC specifically built to support the shared solar program.

50. 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.

Answer:

In 2019, Tampa Electric launched a Shared Solar Program, called Sun Select, providing another choice for customers unable to install rooftop solar. Residential and small business customers can purchase locally generated solar power to match 25%, 50% or 100% of the electricity they use. Business and commercial customers can purchase solar in increments of 1,000 kWh. Sun Select participants pay a locked-in solar rate for the solar energy they purchase instead of paying the fuel charge for that portion of participants' electricity use. The revenue generated from this program is used as an offset to the company's revenue requirement, which is inclusive of renewable projects.

For over 18 years, Tampa Electric's Renewable Energy Program (Sun to Go) has offered residential, commercial and industrial customers the opportunity to purchase 200 kWh renewable energy "blocks" for their home or business. The program also allows residential, commercial, and industrial customers the opportunity to purchase renewable energy to power a specific event. This program enables a family, a business, or a venue to make a statement about their commitment to the environment and to renewable energy. The funds from this program build small, community-sited PV arrays at highly visible locations. These demonstration arrays are designed to educate students and the public on the benefits of renewable energy.

a. Tampa Electric does not have any programs in development currently.

Energy Storage

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

Answer:

Tampa Electric continuously monitors and evaluates developing technologies including various battery storage technologies. While lithium batteries remain the most mature and widely adopted battery technology, other battery technologies such as flow batteries and other forms of long duration energy storage show potential. Their ability to accommodate repeated cycles with minimal degradation is appealing. However, their higher round trip efficiency losses and initial capital installation costs remain a challenge.

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

Answer:

Tampa Electric runs dispatch models to optimize the dispatch of all resources, including battery storage. These models optimize when and to what extent energy storage facilities charge and discharge. Since the passage of the IRA, all of Tampa Electric's energy storage facilities are capable of charging and discharging from the grid without being limited to only charging from solar sites to receive the Investment Tax Credit.

53. 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).

Answer:

There are a variety of factors that can influence the optimal positioning of an energy storage facility within Tampa Electric's system. Placing energy storage closer to the load can improve customer resiliency, effectively shave the peak, and defer or avoid transmission and/or distribution system upgrades. Energy storage systems can also be used to address possible voltage support and frequency regulation issues. Placing energy storage systems at an existing generating facility can provide black start capability. Locating energy storage nearby an existing substation or transmission infrastructure can potentially minimize the required investment. The availability of land to place energy storage in densely developed areas remains a consideration. Additionally, locating energy storage facilities in Energy Communities as defined by the IRA can provide additional bonus tax credit benefits.

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

Answer:

Customers have shown considerable interest in energy storage technologies across various sectors, including residential, commercial, and industrial. In March 2018, Tampa Electric began facilitating the interconnection of customer-owned battery subsystems. To date, more than 1,466 customers have connected batteries, with a total installed capacity of 13.995 MW. The majority of these interconnections are residential, with each subsystem typically consisting of one to eight batteries of varying capacities. The application process is similar to that of renewable energy interconnections, as customers often install battery subsystems alongside photovoltaic (PV) systems. This initiative highlights Tampa Electric's dedication to advancing energy storage solutions. By integrating these technologies, Tampa Electric aims to improve grid reliability and contribute to the shift toward a more sustainable energy future. Furthermore, our commercial energy management team has initiated research and development at two distinct commercial facilities, where two battery systems have been installed at each site. Both facilities serve the community within our service area and will benefit from research focused on peak demand reduction through battery usage.

In addition to this, TEC's Business Development Department works with TEC's business customers and meets with these customers regularly. Over the past year, TEC has received more inquiries and been involved in more discussions regarding battery storage. TEC has been in on-going discussions with a few customers that are both existing commercial customers as well as prospective customers. TEC communicated what battery technology is evolving and how the battery technology correlates to TEC's annual ten year site plan. Some customers have asked about TEC's ability to site Company Owned batteries near their loads, plus asked about potential system benefits from batteries, such as maximizing solar generation in other periods when the generation is not produced. TEC will continue these customer conversations and look for pilot and programming opportunities with customers that provide overall customer value.

55. Please refer to the Excel Tables File (Existing 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab "Q55_Existing Storage."

56. Please refer to the Excel Tables File (Planned 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab "Q56_Planned Storage."

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

a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.

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

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

Answer:

a. Tampa Electric currently does not have any pilot programs on a utility scale > 2 MW.

b. Non- Applicable.

c. Non- Applicable.

Reliability

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

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q58_ Reliability.

TAMPA ELECTRIC COMPANY
UNDOCKETED: REVIEW OF TYSP'S
STAFF'S FIRST DATA REQUEST
REQUEST NO. 59
BATES PAGE(S): 215-216
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59. Describe in detail the methodology the Utility used to determine the seasonal firm capacity contribution of its solar facilities or purchases and provide the percentage contribution for each facility, if applicable. As part of this discussion, please explain whether the Company's existing and/or future solar facilities shift the hour of system peak demand for reliability planning purposes net of solar generation.

Answer:

Based on the expected solar generation profiles on the peak winter load day, solar PV output starts after the peak morning load in January. Solar PV has effectively a zero-capacity value for winter reserve margin. Based on the expected generation profiles of a summer peak load day, solar PV output is approximately 56 percent of its nameplate capacity value when measured at the hour during in which peak load occurs. For reserve margin purposes, the solar contribution is measured at the net peak load hour which is the peak load net solar, and ranges from 56 percent to 1 percent depending on the portfolio's solar capacity mix in any given year. While Tampa Electric's reserve margin is lowest in the winter and solar PV has zero value to winter reserve margin, solar PV provides fuel cost savings that justify the solar additions. The following tables include the percentage contribution for each facility.

Existing Utility

Facility Name	Unit No.	Commercial In-Service		Net		Firm		Firm (%)	
		Mo	Yr	Sum	Win	Sum	Win	Sum	Win
TIA	1	12	2015	1.6	1.6	0.7	0	41.0%	0%
LEGOLAND®	1	12	2016	1.4	1.4	0.5	0	32.3%	0%
Balm Solar	1	9	2018	74.4	74.4	41.0	0	55.1%	0%
Payne Creek Solar	1	9	2018	70.3	70.3	39.7	0	56.5%	0%
Lithia Solar	1	1	2019	74.5	74.5	37.6	0	50.4%	0%
Grange Hall Solar	1	1	2019	61.1	61.1	33.3	0	54.5%	0%
Peace Creek Solar	1	3	2019	55.4	55.4	30.4	0	54.8%	0%
Bonnie Mine Solar	1	1	2019	37.5	37.5	17.8	0	47.3%	0%
Lake Hancock Solar	1	4	2019	49.5	49.5	26.0	0	52.6%	0%
Wimauma Solar	1	2	2020	74.8	74.8	41.8	0	55.9%	0%
Little Manatee River Solar	1	2	2020	74.5	74.5	37.7	0	50.6%	0%
Durrance Solar	1	1	2021	61.1	61.1	34.3	0	56.1%	0%
Magnolia Solar	1	12	2021	74.5	74.5	18.8	0	25.2%	0%
Big Bend II Solar (Ph. I and Ph. II)	1 & 11	1	2022	45.8	45.8	11.5	0	25.2%	0%
Mountain View Solar	1	4	2022	54.6	54.6	13.8	0	25.2%	0%
Jamison Solar	1	4	2022	74.5	74.5	18.8	0	25.2%	0%
Laurel Oaks Solar	1	12	2022	61.2	61.2	15.4	0	25.2%	0%
Riverside Solar	1	12	2022	55.2	55.2	13.9	0	25.1%	0%
Juniper Solar	1	12	2023	70	70	17.7	0	25.3%	0%
Alafia Solar	1	12	2023	60	60	15.2	0	25.3%	0%
Lake Mabel Solar	1	12	2023	74.5	74.5	18.8	0	25.3%	0%
Dover Solar	1	12	2023	25	25	6.3	0	25.3%	0%
Bullfrog Creek Solar	1	12	2024	74.5	74.5	3.7	0	5.0%	0%
English Creek Solar	1	12	2024	23	23	1.1	0	5.0%	0%

Planned Utility

Facility Name	Unit No.	Commercial In-Service		Net		Firm		Firm (%)	
		Mo	Yr	Sum	Win	Sum	Win	Sum	Win
Long Branch Solar	1	12	2025	74.5	74.5	3.7	0	5.0%	0%
Cottonmouth Ranch Solar	1	12	2025	74.5	74.5	3.7	0	5.0%	0%
Keene Branch Solar	1	12	2026	74.5	74.5	3.7	0	5.0%	0%
Curiosity Creek Solar	1	12	2026	54.3	54.3	2.7	0	5.0%	0%
Brewster Solar	1	12	2026	42.7	42.7	0.6	0	1.5%	0%
Mattaniah Solar	1	12	2026	55	55	0.8	0	1.5%	0%
Brewster Solar Phase II	1	12	2027	15.6	15.6	0.2	0	1.5%	0%
Future Solar 1	1	12	2027	74.5	74.5	1.1	0	1.5%	0%
Future Solar 2	1	12	2027	74.5	74.5	1.1	0	1.5%	0%
Future Solar 3	1	12	2028	74.5	74.5	1.1	0	1.5%	0%
Future Solar 4	1	12	2028	55	55	0.8	0	1.5%	0%
Future Solar 5	1	12	2028	74.5	74.5	1.1	0	1.5%	0%
Future Solar 6 *	1	12	2029	149	149	1.5	0	1.0%	0%
Future Solar 7 *	1	12	2030	149	149	1.5	0	1.0%	0%
Future Solar 8	1	12	2031	74.5	74.5	0.7	0	1.0%	0%
Future Solar 9	1	12	2032	74.5	74.5	0.7	0	1.0%	0%
Future Solar 10	1	12	2033	74.5	74.5	0.7	0	1.0%	0%
Future Solar 11	1	12	2034	74.5	74.5	0.7	0	1.0%	0%

60. [Investor Owned Utilities Only] Please refer to Excel Tables File (Firm Solar). Provide an example hourly contribution of the Company's generating units compared to the system demand for a typical seasonal peak day for each season (Summer and Winter). As part of this response, provide the typical hourly demand and contribution of non-firm renewable resources (such as solar or wind), energy storage (charging and discharging separately), nuclear, natural gas, coal, oil, firm renewables, all other generation, purchased power, power sales, and demand response, if applicable.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q60_ Firm Solar.

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.

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.

Answer:

a. The company has non-dispatchable solar assets with some sharing an interconnect with energy storage technologies. Existing and future energy storage technologies provide economic benefits, contribute firm capacity and provide ancillary services. Energy storage technologies are not currently considered as mitigation for firming the non-dispatchable generation resources.

62. 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.

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

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

Answer:

a. Tampa Electric Company does not assume any CO2 compliance costs in the current TYSP's resource planning process.

b. Not Applicable

c. Not Applicable

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63. 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.

Answer:

AIR EMISSIONS:
In 2024, Tampa Electric Company (TEC) did not experience significant impacts to unit dispatch, curtailments, or retirements from environmental regulations relating to air emissions.

In 2017, the Environmental Protection Agency (EPA) implemented an update to the Cross-State Air Pollution Rule (CSAPR) that removed Florida from the CSAPR program based on updated modeling and emission reduction commitments. In December 2019, EPA proposed to approve Florida's Infrastructure State Implementation Plan (SIP) related to the 2015 ozone NAAQS, and on March 5, 2020, the Florida Department of Environmental Protection (FDEP) announced that Florida meets all National Ambient Air
Quality Standards (NAAQS) statewide.

On April 25, 2024, the EPA issued final revisions to strengthen the Mercury and Air Toxics Standards (MATS) rule for existing coal-fired power plants. Tampa Electric's coal-fired unit, Big Bend Unit 4, is subject to these updated MATS regulations. The unit is equipped with an electrostatic precipitator, scrubber, and a selective catalytic reduction system, and has already demonstrated compliance with the most stringent "Low Emitting Electric Generating Unit" classification for MATS. Compliance with the MATS rule has been achieved with minimal additional capital investment, reducing the overall impact of the revised rule. On March 12, 2025, EPA announced a reconsideration of the final revisions.

On March 9, 2022, the EPA published a final rule to amend the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Combustion that removed the stay for natural gas-fired, stationary combustion turbines (CT) and established emission limitations for stationary CTs located at major sources of HAP emissions. Tampa Electric's Big Bend Station is subject to the Rule, and CT Units 4A, 4B, 5, and 6 have demonstrated compliance with the formaldehyde standard.

On April 25, 2024, the EPA issued Greenhouse Gas Emission Guidelines for Existing Coal-Fired Power Plants and New Source Performance Standards for Stationary Combustion Turbines. Tampa Electric Company has one existing coal-fired unit, Big Bend Unit 4, that is subject to the new rule. The new performance standards are based on the remaining operational life of the unit. Units that permanently cease operation prior to 2032 will have no new CO_2 reduction requirements under the new rule. Medium-term units, which include units that cease operation by 2039, will have a numeric emission rate limit based on 40% natural gas cofiring that must be met by 2030. Units that intend to operate after January 1, 2039 (long-term units) will have a numeric emission rate limit based on application of carbon capture and storage with a 90% capture rate that must be met by January 1, 2032. A coalition of 25 states and industry groups have challenged the new standards, and on March 12, 2025, the EPA announced that it will reconsider the new rule. Tampa Electric Company is still developing its compliance strategy.

WATER QUALITY:
Tampa Electric discharges cooling water at Big Bend Station and cooling water and low volume industrial wastewater at Bayside and Polk Power Stations. These discharges are required to meet water quality effluent limits for both chemical and thermal components. For chemical constituents at all three stations, Tampa Electric implements a combination of control measures, including internal treatment technologies, wastestream discharge restrictions and recycling of internal wastestreams. For compliance with thermal permit limitations at Big Bend and Bayside Power Stations, both of which employ once-through cooling technology, the only method of discharge control available is limiting unit output (derating) to reduce thermal loading. Ambient temperature conditions requiring such measures typically occur only in the hottest months (July-September) of the year. Polk Power Station employs a recirculating Cooling Reservoir for thermal control.

WASTE ISSUES:
The Coal Combustion Residuals (CCR) Rule became effective on October 19, 2015, requiring Tampa Electric's Big Bend Power Station to meet various operational requirements and to undertake closure and or retrofit of three CCR units at the station. Two of the projects were completed in 2020 and 2021 and.the final of the three is the North Gypsum Stackout Area (NGSA) Drainage Enhancements Project, which has proceeded since 2023 and will be completed in 2025. However, it should be noted that on May 8, 2024, EPA finalized revisions to the 2015 rule, commonly referred to as the Legacy Impoundments and CCR Management Units (CCRMUs) Rule. The new rule regulates Impoundments that were still in existence at facilities no longer producing power as of October 2015

(not applicable to Tampa Electric) and also requires utilities to evaluate their sites to identify any past placements of CCRs in the environment, which are defined by the rule as CCRMUs. Tampa Electric expects to perform the required evaluations in 2025 and 2026, after which groundwater monitoring and corrective actions, including closures, could be required based on the results. If necessary to meet any new requirements under the Legacy Rule, additional CCR project petitions could be submitted to the Commission for recovery by TECO. There are no CCR units at the Polk or Bayside Power Stations regulated under the CCR Rule and compliance with neither these nor any other waste regulations is expected to impact unit dispatch or require curtailments or retirements during the current planning period.

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

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

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

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

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

e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Refer to the Excel Tables File (Emissions Cost). Complete the table by providing information on the costs for the current planning period.

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

Answer:

a. Yes. TEC will have one coal-fired unit, Big Bend Unit 4, subject to the rule.

b. TEC is still evaluating its compliance strategy.

c. Given the uncertainty surrounding the implementation of the rule, TEC's timeline for completing a compliance strategy is unknown, and continuously evolving.

d. The Florida Department of Environmental Protection will be responsible for approving the compliance strategy and timeline.

e. TEC is still developing the compliance strategy. Recovery may be sought if expenses are incurred as result of the new emission guidelines. The amount is currently unknown. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q64e_ Emissions Cost.

f. There are many variables that impact the compliance strategy. Given the uncertainty surrounding the final outcome of the rule, and the number of years before the first compliance milestone is required, TEC is still finalizing its compliance strategy.

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

a. Mercury and Air Toxics Standards (MATS) Rule.

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

c. Cooling Water Intake Structures (CWIS) Rule.

d. Coal Combustion Residuals (CCR) Rule.

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

f. Affordable Clean Energy Rule or its replacement.

g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam

Answer:

a. No reliability impacts.

b. No reliability impacts.

c. TEC has completed CWIS modifications associated with the repowering of Big Bend Unit 1. TEC has also completed the modifications for Bayside. Effects on reliability related to compliance with this rule will depend on the compliance option implemented for Big Bend 4. If, for example, unit operation is contingent on the function of intake structure modifications, then malfunction of screens or pumps could limit or prevent operation of associated generating units.

d. No reliability impacts.

e. The new Greenhouse Gas emission standards could impact the amount and type of fuel burned on Big Bend Unit 4, the dispatch of that unit, as well as its retirement date. Until a compliance strategy is finalized, the extent of the impacts are unknown.

f. Not applicable – the Standards of Performance for Greenhouse Gas Emissions is the replacement rule.

g. None.

Electric Power Generating Point Source Category.

66. 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab Q66_EPA Operational Effects.

67. 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab Q67_EPA Cost Effects.

68. 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP – Data Request #1. Excel Tables Data Request # 1.xlsx," tab Q68_EPA Unit Availability.

69. 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.

Answer:

Not applicable.

Fuel Supply & Transportation

70. Please refer to the Excel Tables File (Energy Rates). Complete the table by providing information on the Utility's firm capacity and energy purchases, non-firm energy purchases, and the utility's as-available energy rate. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP.DR1.Excel Tables.Final.xlsx", tab Q70_ Energy Rates.

71. 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.

Answer:

The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP-Data Request #1.xlsx," tab Q71_Fuel Usage & Price.

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

Answer:

Fuel commodity price forecasting is analyzing historical and current prices, along with forecasts from various consultants and agencies, such as the New York Mercantile Exchange (NYMEX), Energy Information Administration (EIA), S&P Global, and Coaldesk, LLC Publications. The Company carefully examines its final fuel forecasts to identify trends and anomalies (e.g., an unexplainable spike in natural gas prices) to ensure the accuracy of long-term energy pricing and planning. The resulting fuel price forecasts, including high and low internal fuel forecasts, are compared to independent sources such as NYMEX, EIA, and S&P Global for reasonableness.

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

a. Coal.

b. Natural Gas.

c. Nuclear.

d. Fuel Oil.

e. Other (please specify each, if any).

Answer:

a. The overall trend of reduced domestic demand for coal is expected to persist through the planning period as renewable generation increases and coal retirements continue. However, domestic and global events, such as recent U.S. tariff policies, the evolving U.S. stance on clean energy, and the ongoing Ukraine conflict, can quickly and significantly impact supply and demand conditions for domestic and global energy, creating unexpected challenges and uncertainties. Nevertheless, Tampa Electric's coal consumption as a percentage of system fuel mix is anticipated to be minimal over the current planning period, with coal forecasted to account for less than 2.5 percent of the energy mix from 2025 forward. Tampa Electric will acquire spot coal supply and transportation as needed during the planning period.

b. Natural gas pricing fundamentals are anticipated to remain bullish over the planning period due to increased demand. LNG feedgas demand will be the primary driver in the medium term, with several new U.S. LNG projects set to come online. Support from the new administration for natural gas could lead to the announcement of additional LNG projects later in the planning period. Price volatility is expected to increase notably in winter seasons due to high LNG export capacity utilization and continued additions of liquefaction trains. Domestic gas demand, including exports, is forecast to grow by 16.2 billion cubic feet (Bcf)/day (15%) from 2025 to 2029, reaching 122.4 Bcf/d. LNG feedgas demand is expected to jump 103% by 2029 relative to 2023 levels, driven by new LNG export facilities. Power burn demand from data centers will also impact pricing. Domestic gas production

is projected to grow by 12.9 Bcf/d between 2025 and 2029, reaching 115.6 Bcf/d. Production growth will primarily come from the Haynesville, Permian, Austin Chalk, and associated gas plays.

c. Tampa Electric does not have nuclear generation as part of its energy mix.

d. The U.S. is anticipated to be a net exporter of oil and petroleum products throughout the planning period. Domestic demand in the U.S. has flattened with the ongoing transition to cleaner energy. The evolving U.S. tariff policy and the lack of support for clean energy has introduced uncertainty regarding global oil demand growth expectations. On the supply side, any potential ceasefire in the Russia-Ukraine conflict could reintroduce Russian oil volumes into the market. Furthermore, continued supply growth from producers outside of the OPEC+ agreement, primarily in North and South America, is exerting additional downward pressure on prices in the near term. Other factors influencing supply and demand include electric vehicle adoption, transportation trends, global economic growth, and geopolitical developments. Since Tampa Electric has a limited number of oil-capable units and uses oil solely as a back-up fuel, its projected oil use for energy production is less than one percent. Therefore, oil price volatility will have a minimal impact on the Company.

e. Non-Applicable.

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74. Please provide a comparison of the Utility's 2024 fuel price forecast used to prepare its 2024 TYSP and its actual 2024 delivered fuel prices.

Answer:

	Forecast ($/MMBtu)	Actual ($/MMBtu)	Delta
Jan-24	$ 5.28	$ 4.51	$ (0.77)
Feb-24	$ 5.26	$ 3.83	$ (1.43)
Mar-24	$ 4.85	$ 2.79	$ (2.06)
Apr-24	$ 4.86	$ 2.99	$ (1.87)
May-24	$ 4.67	$ 3.19	$ (1.48)
Jun-24	$ 3.66	$ 4.19	$ 0.53
Jul-24	$ 4.00	$ 3.86	$ (0.14)
Aug-24	$ 4.02	$ 3.25	$ (0.77)
Sep-24	$ 4.03	$ 3.19	$ (0.84)
Oct-24	$ 4.04	$ 3.98	$ (0.06)
Nov-24	$ 4.39	$ 3.45	$ (0.94)
Dec-24	$ 4.97	$ 4.62	$ (0.35)
Average	$ 4.50	$ 3.65	$ (0.85)

Data from A-Schedules

75. Please explain any notable changes in the Utility's forecast of fuel prices used to prepare the Utility's current TYSP compared to the fuel process used to prepare the Utility's prior TYSP.

Answer:

There were no notable process changes in Tampa Electric's forecast of fuel prices from its 2024 TYSP to its 2025 TYSP.

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

Answer:

Tampa Electric continuously evaluates its natural gas portfolio to ensure adequate assets for reliable, cost-effective gas delivery from supply areas to our generating facilities. Recently, Tampa Electric acquired additional upstream pipeline capacity to procure gas from the Permian Basin and renewed existing upstream Transco capacity. Additionally, Tampa Electric has implemented a gas transportation solution for the South Tampa Resiliency Project. Tampa Electric will continue to assess new pipeline projects, capacity expansions and open seasons to meet the increased natural gas requirements as the Company transitions from coal to natural gas and renewables. The Company is also evaluating longer-term supply transactions to diversify the portfolio. Lastly, the Polk Fuel Diversity Project will provide additional backup fuel to the Polk power station, mitigating gas pipeline interruption risk and supporting energy production during extreme weather events. Other key areas of focus include enhancing the portfolio of fuel assets to mitigate supply or transport interruptions, improving pipeline transportation terms upon renewal, assessing pipeline receipt point quality, targeting seasonal firm supply less susceptible to extreme conditions, and adding market area or upstream pipeline capacity or storage to meet growing gas requirements and mitigate Mobile Bay supply risk.

Emerging Technologies

77. [FEECA Utilities Only] Please refer to the Excel Tables File tabs listed below. Complete the tables by providing information on the data centers for the time period listed.

a. Excel Tables File (Existing Data Centers), including for data centers being served as of December 31 of the year prior to the current planning period.

b. Excel Tables File (Planned Data Centers), including for data centers that are planned during the current planning period.

Answer:

a. The requested data is provided in the Excel Tables Spreadsheet, "(BS 149) 2025 TYSP - Data Request #1.Excel Tables Data Request #1.xlsx", tab Q77a_Existing Data Centers.

b. At the present, there are no planned new data centers in the short term. The requested data is provided in the Excel Tables Spreadsheet, "2025 TYSP - Data Request #1.Excel Tables Data Request #1.xlsx", tab Q77b_Planned Data Centers.

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78. With respect to the load forecast included in the Utility's 2025 Ten-Year Site Plan to be filed in April this year, does the load forecast include projections of annual energy consumption and demand associated with data centers within your service area during the forecasting time horizon (2025-2034)?

a. If any such projections have been made, please provide details of the projections including the type of data centers expected to contribute to such energy/demand, and what factors are driving such energy consumption and demand.

b. If no specific projections have been made, what does the Utility believe is the likely pattern of load growth associated with this industry within its service territory?

Answer:

No, the load forecast included in the Utility's 2025 Ten-Year Site Plan does not include projections of annual energy consumption and demand associated with data centers during the forecasting time horizon (2025-2034).

a. At the time these forecasts were produced, it was too early to determine what, if any, data center load would materialize in TEC's service area. Therefore, no projected new data center load growth is in the current forecast.

b. Tampa Electric is actively working to attract a data center to the service area. Currently, TEC does not have any end use customer commitments for data center loads.

79. Please identify the Utility's issues and/or concerns, if any, that are expected to result from the growth in data centers in your utility's service territory. Please also specify how has, and how does, your utility anticipate responding to such issues or concerns.

Answer:

TEC is working internally to determine the cost to serve each separate data center, since the loads, costs and revenues can vary significantly. TEC plans to ensure each data center pays for their portion of service costs without existing retail customers subsidizing the incremental costs associated with data center loads. TEC is also working towards gaining a better understanding of the impact data centers may have on the local economy, such as increasing tax base, employment and attracting other business to co-locate near data centers with high paying jobs. These conversations include the Department of Commerce, local Economic Development Organizations, consultants, developers and landowners.

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

Answer:

There is currently no utility power technology research being funded through the Energy Conservation Cost Recovery Clause. The company has a clean energy center where energy storage technology is being tested but it is too soon to conclude research results. The company's most recent generation expansion plan, filed in the April 1, 2025 Ten Year Site Plan, does not incorporate any of the technology being tested.

81. Has the Utility employed, or considered using, any type of the artificial intelligence and/or other new technologies/tools in its load forecasting, operation, customer service, and cybersecurity management? Please explain your response.

Answer:

LOAD FORECASTING: The load forecasting area has not employed or considered using any type of artificial intelligence and/or other new technologies/tools in its process.

OPERATIONS:

AI Analysis of Remote Sensing Data – The Remote Sensing project involves the collection of LIDAR, RGB (visual spectrum images} UAS (drone) images and the ingestion and analysis of this data to create a 3D model of distribution grid assets and structures and vegetation in close proximity to distribution assets. AI is utilized against this 3D model to inform performance and priority of vegetation management work, validate the location and identify of feeder and lateral assets, establish topography of substation assets to inform flooding risk, and identify failure mechanisms in distribution assets (failing poles, cross arms, insulators, etc.).

Predictive Maintenance of Solar Plants - This is an evaluation of Snowflake predictive modeling for pattern recognition. TEC will pull alarm event data for one to two years for one solar plant and evaluate it with Snowflake pattern recognition software to evaluate the ability to predict developing inverter failures from alarm event data.

Heat Rate and Plant Modeling - AI will utilize thermodynamic models and operating data of our natural gas combined cycle plants to evaluate expected plant performance against actual plant operating performance and use this information to produce recommendations for changes in operations and maintenance to improve performance and lower cost of operations.

Contracts Intelligence AI Pilot - The purpose of the Contracts Copilot Pilot is to address pain points, gaps, and challenges experienced by TEC's legal organization related to contract ingestion, review, and analysis, and to position the organization to deliver value and improve decision-making using generative artificial intelligence (GenAI). The platform's configuration, workflow, and integration will be prepared in alignment with GenAI architecture and Azure setup, positioning the organization to further deploy AI capabilities across the legal department and potentially other areas of the business.

CUSTOMER SERVICE:

IVR Speech Analytics:
A sample of inbound customer calls was analyzed using AI-powered speech analytics to identify call drivers, categorize call types, and extract actionable insights. These findings will inform opportunities to reduce call volume and enhance responsiveness to customer inquiries.

Conversational AI Bot Prototype:
The team developed a prototype of a conversational AI bot, integrating a sample set of customer bills to information on the Tampa Electric website. The bot successfully answered questions related to usage trends and pricing. Next steps include continued testing, refinement of capabilities, and exploring deployment within the contact center to support high bill inquiries during the summer.

Virtual Assistant Enhancement:
Plans are underway to enhance the virtual assistant chatbot on the external website to improve self-service and reduce inbound call volume. This initiative is informed by the analysis of a sample of chatbot queries, with next phase evaluating the level of effort required for implementation.

AI-Driven Customer Personalization:
We are leveraging predictive and generative AI to support key customer initiatives. The initial phase will focus on developing custom AI modules using customer data to enable low-income customer engagement, foundational segmentation, and electric vehicle adoption. These capabilities aim to deliver targeted communications, recommend relevant programs, and provide personalized usage insights to help customers manage their energy bills.

AI-Enabled Survey Analysis:
The Customer Research team uses AI tools to analyze qualitative survey responses and customer sentiment. This approach enables the identification of key themes and customer feedback trends more efficiently, streamlining the team's data analysis efforts.

AI-Assisted Call Handling

1. AI-Powered Self-Service:
    a. Leverage natural language understanding (NLU) and automatic speech recognition (ASR) to enable conversational interactions through voice-enabled self-service solutions.

2. Automated Call Summarization:
    a. Utilize generative AI to produce real-time or post-call summaries, streamlining documentation and enabling more efficient follow-up.

3. AI-Driven Contact Center Insights:
    a. Apply AI to analyze customer interactions, detect sentiment, and uncover trends to support quality assurance and agent development.
    b. Use AI to identify key phrases, ensure compliance, and deliver coaching recommendations to improve agent performance and consistency.

CYBERSECURITY MANAGEMENT: For cybersecurity management, the following are examples of technologies and tools leveraging artificial intelligence (AI) that Tampa Electric utilizes to strengthen its cybersecurity, risk, and compliance posture:

- The Endpoint Detection and Response (EDR) solution utilizes advanced AI technology that combines machine learning and human expertise to enhance threat detection and response capabilities. The EDR's AI analyzes vast amounts of data quickly, identifying anomalies and providing actionable insights, enabling faster and more accurate incident resolution.

- Powered by AI, a phishing analyzer tool reviews abuse and phishing submissions from team members, aggregating over 365 parameters to identify anomalies within communications, links, and attachments. This tool automatically revokes sessions, rotates passwords, quarantines emails, and sends notifications to the team member who submitted the email for further evaluation.

- A cybersecurity event and incident monitoring solution leverages AI to assess alerts and cross-check them with historical alert data, accurately determining if the alert is a true or false positive. AI further enhances this by generating a detailed alert summary, assisting analysts in reviewing and taking prompt action.

82. Please identify and discuss emerging power generation and consumption technologies your Company is considering. As part of this response, please describe any formal steps the Company has or will take for possible implementation of the technology.

Answer:

Tampa Electric routinely considers and evaluates potential emerging technologies that may provide benefits to our customers. One field that shows the potential for development is long duration energy storage. While lithium battery storage remains the most established and commercially available energy storage technology today, in the future, flow batteries may present a competitive alternative when deployed at a large scale. Tampa Electric is currently constructing a 0.78 MW – 7.8 MWh flow battery co-located at a solar facility in Hillsborough County with the aim of examining potential benefits such as increased cycling capability and reduced degradation as well as gaining valuable operations and maintenance experience. This technology is being implemented at an appropriate pilot scale of less than 1 MW to develop a meaningful assessment before subjecting customers to the risk of deploying such a technology on a larger scale.