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May 18, 2020

-VIA ELECTRONIC FILING-

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

RE: Docket No. 20200000-OT
Florida Power & Light Company and Gulf Power Company's 2020-2029 Ten Year Power Plant Site Plan

Dear Mr. Teitzman:

Please find attached Florida Power & Light Company and Gulf Power Company's responses to Staff's First Data Request (Nos. 3-82).

If there are any questions, please contact me at (561)304-5662.

Sincerely,

/s/ William P. Cox
William P. Cox
Senior Attorney
Fla. Bar No. 00093531

Enclosures

cc: Doug Wright
Donald Phillips

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

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
Please explain if the Company assumes 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:

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.

RESPONSE:
Yes. Projected CO_2 compliance costs were utilized in the analyses that led to the resource plan presented in FPL and Gulf Power's 2020 Ten-Year Site Plan.

a. The first year in which there is a projected non-zero compliance cost value is 2026.

b. If projected CO_2 compliance costs had been excluded from the analyses that led to the resource plan presented in FPL and Gulf Power's 2020 Ten-Year Site Plan, then the resource plan would have been different.

c. In response to Staff's Data Request No. 4, FPL performed an analysis to determine a resource plan assuming projected CO_2 compliance costs are zero. The resulting resource plan is presented in the table in Attachment No. 1. Note that the resource plan shown (that results from a scenario in which projected CO_2 compliance costs are zero) does not add any resource additions for which there is inadequate time to construct the addition, including any resources which would need to follow the Florida Public Service Commission's Bid Rule (Rule 25-22.082, F.A.C.) and/or require a determination of need filing pursuant to Section 403.519, F.S.

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

RESPONSE:
FPL and Gulf Power design and construct new infrastructure to comply with applicable codes, including flood protection requirements. The Companies continuously monitor existing infrastructure – which was previously built to applicable codes – and make necessary adjustments to ensure reliable generation and delivery of electricity to their customers.

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

RESPONSE:
Please see Attachment No. 1 to this response for FPL and Attachment No. 2 for Gulf Power. Gulf Power's hourly loads have been shifted forward to represent Eastern Standard Time.

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

RESPONSE:
Please see Attachment No. 1 to this response for FPL and Attachment No. 2 for Gulf Power.

QUESTION:
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.

RESPONSE:
For FPL, system-wide temperatures are calculated using hourly temperatures from four locations across FPL's service territory. Miami, Ft. Myers, Daytona Beach, and West Palm Beach are the locations from which temperatures are obtained. In developing the system-wide hourly temperatures, these regional temperatures are weighted by regional retail energy sales.

For Gulf Power, system-wide temperatures are based on hourly temperatures from the Pensacola weather station.

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

RESPONSE:
Customer Forecast
FPL's forecasts of customers by revenue class for residential, commercial, industrial, and street & highway are based on econometric models and exponential smoothing models. Customer forecasts for other public authority, railroads & railways, and resale are based on customer specific information. The total customer forecast is the sum of the revenue class forecasts. Economic variables, such as population and employment, are from IHS Markit. The accuracy of the current customer forecast is expected to be consistent with or better than that of prior forecasts, which was 0.2% for the 2019 TYSP customer forecast. The current total customer forecast is the sum of the revenue class forecast, which is consistent with the methodology employed by Gulf Power. Previously, the total customer forecast was based on an econometric model and the revenue class forecasts were reconciled to the total by adjusting the residential and commercial class forecasts.

Gulf Power's residential customer forecasts for the first two forecast years are based on input from Gulf Power's field marketing manager and subsequent forecast years are based on household growth projections from IHS Markit. Commercial customer forecast for the first forecast year is based on input from Gulf Power's field marketing manager and subsequent forecast years are based on residential customer growth. Industrial customer growth is based on historical trends. Lighting customer forecasts are based on input from Gulf Power's lighting team. The accuracy of the current customer forecast is expected to be consistent with or better than that of prior forecasts, which was 0.2% for the 2018 TYSP customer forecast. The forecasts presented in Gulf Power 2019 TYSP were developed prior to Hurricane Michael, which occurred in October 2018. The unusually large variance of 1.6% in the 2019 TYSP customer forecast is due to the impacts of Hurricane Michael. Gulf Power's customer forecast methodology is generally consistent with the methodology used for prior forecasts.

The customer forecast for the planned combined system is derived by summing the FPL and Gulf Power revenue class customer forecasts.

Peak Demand

FPL's seasonal peak demand forecasts are developed using two econometric models, one for summer peak and one for winter peak. The summer peak demand model is based on the peak day temperature, cooling degree hours (CHDs) for the prior two days, income per capita, an energy efficiency variable, an autoregressive term, a moving average term, and binary variables for 2005 and 2019. The winter peak demand model is based on peak day temperature, prior day temperature, income per capita, and binary variables for 2008 and 2011. The accuracies of the current peak demand forecasts are expected to be consistent with or better than that of prior forecasts, which were 4.3% and 3.5% for the 2019 TYSP forecasts for summer and winter peaks, respectively. FPL's seasonal peak demand forecasting methodologies are generally consistent with the methodologies used for the prior seasonal peak demand forecasts.

Gulf Power's seasonal peak demand forecasts are developed using two econometric models, one for summer peak and one for winter peak. The summer peak demand model is based on peak day temperature, income per capita, an efficiency variable, and a moving average term. The winter peak demand model is based on peak day temperature, an efficiency variable, an autoregressive term, and a moving average term. Previously, Gulf Power's peak demand forecast was developed using the Peak Demand Model (PDM) which spreads the monthly energy projections to each hour using historical hourly load shapes to arrive at a forecasted hourly load shape; the monthly peak demand was the highest single hourly load in each month. Gulf Power's current seasonal peak demand forecast methodology is consistent with that used by FPL; therefore, the accuracies of Gulf Power's peak demand forecasts are expected to be consistent with those of FPL. However, the accuracy of Gulf's 2019 TYSP forecasts for summer and winter peaks are unavailable because those forecasts were developed by combining the peak demands for each customer class, and weather-normalizing by customer class would require actual coincident peaks by class, which are not available on a regular basis.

The peak demand forecast for the planned combined system is derived by summing the forecasted hourly load shapes for both FPL and Gulf Power.

Total Retail Energy Sales

FPL's total retail energy sales forecast is the sum of the revenue class energy sales forecasts. The residential, commercial, and industrial class energy sales forecasts are based on projected use per customer per billing day multiplied by the projected number of customers and billing days. Additional details for the individual models are provided below. The accuracy of the current retail energy sales forecast is expected to be consistent with or better than that of prior forecasts, which was 1.0% for the prior TYSP energy sales forecast. The current total retail sales forecast is

the sum of the revenue class energy sales forecast, which is consistent with methodology employed by Gulf Power. Previously, total retail energy sales forecast was based on an econometric model for total system NEL and the sum of the individual revenue class energy sales forecasts were reconciled to total NEL by adjusting the residential and commercial class energy sales forecasts.

FPL's residential use per customer forecast is based on an econometric model which includes normal weather, a price term to reflect increases in the real price of electricity, real disposable income per household, an energy efficiency variable, an autoregressive term, a binary variable for Hurricane Irma, and monthly binary variables.

FPL's commercial use per customer forecasts are based on three econometric models, one each for large commercial customers (>=500 kW), medium commercial customers (21 – 499 kW), and small commercial customers (<=20 kW). The econometric model for large commercial use per customer includes normal weather, a price term to reflect increases in the real price of electricity, employment, a binary variable for Hurricane Irma, and monthly binary variables. The econometric model for medium commercial use per customer includes normal weather, a price term to reflect increases in the real price of electricity, employment, a binary variable for Hurricane Irma, a monthly binary variable, and an autoregressive term. The econometric model for small commercial use per customer includes normal weather, a price term to reflect increases in the real price of electricity, employment, a binary variable for Hurricane Irma, and an autoregressive term.

FPL's industrial use per customer forecasts are based on two exponential smoothing models for large (>= 500 kW) and medium (21-499 kW) industrial customers and one econometric model for small (<= 20 kW) industrial customers. The small industrial use per customer model includes normal weather, a binary variable for February 2019, a variable for the impact automatic disconnection of unknown usage (UKU) premises, and an autoregressive term.

FPL's energy sales to street & highway lighting, railroads & railways, and other public authority classes are based on exponential smoothing models.

Gulf Power's total retail energy sales forecast is the sum of the revenue class energy sales forecasts. The residential and commercial class energy sales forecasts are based on projected use per customer per billing day multiplied by the projected number of customers and billing days; additional details for the individual models are provided below. The industrial sales forecast is

developed using a combination of on-site surveys of major industrial customers and historical average energy use per customer per billing day for smaller industrial customers. The outdoor lighting energy sales forecasts were developed using historical growth rates and input from Gulf Power's lighting team. The accuracy of the current retail energy sales forecast is expected to be

consistent with or better than that of prior forecasts, which was 0.8% for the 2018 TYSP energy sales forecast. The forecasts presented in Gulf Power 2019 TYSP were developed prior to Hurricane Michael, which occurred in October 2018. The energy sales variance of 1.2% in the 2019 TYSP forecast is partly due to the impacts of Hurricane Michael on energy sales. Gulf Power's energy sales forecasting methodology is generally consistent with the methodology used for prior forecasts.

Gulf Power's residential use per customer forecast is based on an econometric model with includes normal weather, a price term to reflect the real price of electricity for residential customers, an energy efficiency variable, historical binary variables, monthly binary variables, and an autoregressive term.

Gulf Power's commercial use per customer forecasts are based on two econometric models, one for small (rate schedules GS and FLAT-1 GS) commercial customers and one for large (all other commercial non-OS rate schedules). The econometric model for small commercial use per customer includes normal weather, a price term to reflect the real price of electricity for commercial customers, an energy efficiency variable, historical binary variables, monthly binary variables, and an autoregressive term. The econometric model used for large commercial use per customers includes normal weather, a price term to reflect the real price of electricity for commercial customers, an energy efficiency variable, monthly binary variables, and an autoregressive term.

The total retail energy sales forecast for the planned combined system is derived by summing the forecasted energy sales for both FPL and Gulf Power.

QUESTION:
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.

RESPONSE:
The following open FPSC dockets are based on the same load forecast used in FPL and Gulf Power's current planning period TYSP:

- 20200001-EI – Fuel and purchased power cost recovery clause with generating performance incentive factor.
- 20200114-EQ – Petition for approval of renewable energy tariff and standard offer contract, by Florida Power & Light Company.
- 202000115-EQ – Petition for approval of new standard offer for purchase of firm capacity and energy from renewable energy facilities or small qualifying facilities and rate schedule QS-2, by Gulf Power Company.

There are no closed FPSC dockets or non-docketed FPSC matters that used the same load forecast.

QUESTION:
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 Microsoft Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

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

RESPONSE:
a. Yes, accuracy is evaluated for both FPL and Gulf Power. The formula used to calculate the forecast accuracy of customer and retail energy forecasts is shown below. The forecast variance is calculated as the weather normalized actual value divided by the forecast value minus 1. For customers, actuals are used as there are no weather normalized actuals. Variances are calculated over a one to ten year forecast horizon.

$$Forecast\ Variance\ (\%) = \left|\left(\frac{Weather\ Normalized\ Actual}{Forecast}\right) - 1\right|$$

Please see Attachment No. 1 and No. 2 to this response for the customer and retail energy forecast errors for FPL and Gulf Power, respectively.

b. Not applicable for either FPL or Gulf Power.

QUESTION:
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 Microsoft Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

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

RESPONSE:
a. Yes, for FPL. The formula used to calculate the forecast accuracy of FPL's Summer/Winter Peak Energy Demand forecasts is shown below. The forecast variance is calculated as the weather normalized actual value divided by the forecast value minus 1. Variances are calculated over a one to ten year forecast horizon.

$$Forecast\ Variance\ (\%) = \left|\left(\frac{Weather\ Normalized\ Actual}{Forecast}\right) - 1\right|$$

A positive forecast variance represents an under-forecast, while a negative forecast variance represents an over-forecast.

Please see Attachment No. 1 to this response for the FPL Summer/Winter Peak Energy Demand forecast accuracy.

b. Gulf Power does not routinely review the accuracy of its peak demand forecasts presented in its TYSP. In prior TYSPs, the peak demand forecasts were developed by combining the peak demands for each customer class, and weather-normalizing by customer class would require actual coincident peaks by class, which are not available on a regular basis.

QUESTION:
Please explain any historic and forecasted trends in:

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

b. Average KWh consumption per customer, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

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

RESPONSE:
Customers
FPL's total customers grew 2.0% in 2019, compared to the growth of 1.2% in 2018. FPL acquired Vero Beach during the fourth quarter of 2018, and the stronger growth in 2019 was due to this acquisition. The total customer growth was driven primarily by residential customer growth, which grew 2.0% in 2019. Commercial customers grew by 2.2% in 2019 due to the growth of small commercial customers; the number of large and medium commercial customers decreased. Industrial customer grew by 1.7% in 2019 due to the growth of small industrial customers. Positive customer growth is projected for all major customer classes over the next 10 years.

Gulf Power's total customers were effectively flat in 2019, compared to the growth of 1.2% in 2018. The flat customer growth in 2019 was due to the impacts of Hurricane Michael, which occurred in October 2018. The total customer growth was driven by a slight growth of 0.1% in residential customers, offset by a decline of -0.5% in commercial customers. Industrial customers decreased by -1.4% in 2019; however, this decrease is not meaningful because the decline in customers was driven entirely by smaller customers, and the industrial class has relatively few customers. Positive customer growth is projected for total customers over the next 10 years.

Total customers for the planned combined system are projected to grow at a steady rate over the next 10 years, driven primarily by residential customer growth.

Consumption per customer

FPL's residential use per customer continues the downward trend which began prior to the Great Recession from 2008 to 2009. The primary driver of the usage decline is improved energy efficiency. Improvements to energy efficiency are expected to continue driving down residential use per customer over the next several years, with income growth offsetting some of the declines.

FPL's commercial use per customer also continues on a downward trend and as with the residential class, the primary driver of the usage decline is improved energy efficiency. Additionally, the growth in total commercial customers is entirely due to growth in the number of small commercial customers and this also results in a decline in average use per customer. The continued growth in small commercial customers combined with little to no growth in medium and large commercial customers is expected to result in flat or declining commercial usage over the forecast horizon.

FPL's industrial use per customer trends are less reliable than those for residential and commercial customers because temporary accounts related to housing construction are classified as small industrial customers. During the pre-Great Recession housing boom, the numbers of these temporary construction accounts increased significantly, which resulted in a decline in the average use per customer for the industrial class. The collapse of the housing markets then resulted in a significant increase in the average use per customer. As housing markets returned to normal levels, the average use per customer began to decline again because of the increase in the number of temporary construction accounts. As construction activity returns to normal levels, growth in the number of temporary construction accounts will slow and will result in a leveling off of the use per customer trend.

Gulf Power's residential use per customer decline began during the Great Recession and has continued on a downward trend. The primary driver of this downward trend is improved energy efficiency. The declining trend has slowed during the most recent years, and the residential use per customer is projected to remain relatively flat over the forecast horizon.

Gulf Power's commercial use per customer has also been declining, and the primary driver of the decline is improved energy efficiency. However, the commercial use per customer declines have been faster than those of the residential class over the most recent years. Commercial use per customer is expected to decline over the forecast horizon.

Gulf Power's industrial use per customer trends are less reliable than those for residential and commercial customers because the majority of Gulf Power's industrial class sales come from a small number of customers, and operational needs result in significant year over year changes to industrial sales. The significant year over year changes in sales result in average use per customer trends which are neither meaningful nor informative.

For the planned combined system, projected use per customer growth trends are driven by FPL because of the relative size of FPL versus Gulf Power.

Retail Energy Sales – FPL
FPL's retail energy sales have shown a slight growth trend, driven by growth in both the residential and commercial classes. Both residential and commercial energy sales have grown due to growth in the number of customers, somewhat offset by declines in the average use per customer for each class. Retail energy sales are expected to grow over the forecast horizon, driven by growth in the number of residential and commercial customers.

Net Energy for Load – Gulf Power
Gulf Power's Net Energy for Load (NEL) has been relatively flat over the most recent years, where the growth in the number of residential and commercial customers has been offset by declining use per customer. NEL is expected to decline somewhat in 2021 primarily driven by stronger use per customer declines due to the Hurricane Michael storm surcharge but is expected to grow over the remainder of the forecast horizon, driven by growth in the number of residential and commercial customers.

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

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

b. Demand Reduction due to Demand Response, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

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

d. Net Firm Demand, by the sources of peak demand appearing in Schedule 3.1 and Schedule 3.2 of the current planning period TYSP, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

RESPONSE:
Demand Reduction due to Conservation and Self Service: For the combined FPL and Gulf Power systems, the residential and commercial/industrial conservation at the time of the summer and winter peaks has steadily increased over the last 10 years and is forecast to continue its steady increase before leveling off in 2025.

Demand Reduction due to Demand Response: For the summer peak for the combined FPL and Gulf Power systems, residential has seen a reduction in load management over the last 10 years, particularly in 2014 and 2015. Commercial/industrial has been relatively flat over the last 10 years with the exception of slight increases in 2018-2019. Load management is expected to increase for residential and commercial/industrial over the next 10 years. For the winter peak, residential has declined modestly over the last 10 years. Commercial/industrial declined in 2013 and has been fairly flat since then. Load management is expected to increase modestly for residential and remain fairly flat for commercial/industrial over the next 10 years.

Total Demand: For the combined FPL and Gulf Power systems, the Summer peak has trended up over the last 10 years. This increase has been driven by the growth in customers and partially offset by the reduction in use per customer. The increase is also due to the addition of new

wholesale contracts. The forecast for the summer peak over the next 10 years indicates positive growth as a result of increases in the number of retail customers while the wholesale load levels off after 2021. The winter peak declined from 2010, which was an unusually cold year, until 2013 after which the winter peak has trended up slightly. The same drivers of summer peak are driving the winter peak; increasing customers offset by declining use per customer. The forecast for the winter peak over the next 10 years indicates positive growth as a result of increases in the number of retail customers while the wholesale load levels off after 2022.

Net Firm Demand: The Net Firm Demand for the combined FPL and Gulf Power systems, for both summer and winter peaks, follow the same patterns as the Total Demand and are influenced by the same factors. After adjusting for Demand Response and Conservation, they are simply at a lower level than Total Demand.

QUESTION:
Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the Company's Summer/Winter Peak Energy Demand.

RESPONSE:
The only non-weather anomaly during the 10 years prior to the current planning period that may have affected both FPL and Gulf Power's Summer and Winter peak energy demands would be the recovery from the Great Recession. Since by definition, the summer and winter peak occur during one specific hour of the year, most non-weather events will simply change the hour when the peak occurs and not necessarily contribute to the peak. Only an event such as the recovery from the Great Recession, which occurred over a long period of time, would impact the summer and winter peaks.

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

FPL:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.
b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012 and the decline in the growth rate in 2017, respectively.

DEF:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.
b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the projected decline in the growth rate in 2019, respectively.

TECO:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.
b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy in 2011.

GPC:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.
b. Please explain why the divergence in the growth rates of customers and retail energy sales increases during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, the decline in the growth rate in 2017, and the increase in the growth rate in 2018, respectively.

GRU:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.
b. Please identify the drivers which contribute to the sharp fall in the growth of retail energy sales in the period 2011-2014 and the decline in the growth rate in 2017, respectively.

JEA:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.
b. Please explain why the divergence in the growth rates of customers and retail energy sales increase during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2013, and the decline in the growth rate in 2017, respectively.

LAK:
a. Please explain, in general, why the Company's growth rate of retail energy sales is projected to lag the growth rate of customers starting in 2020.
b. Please explain why the divergence in the growth rates of customers and the retail energy sales is projected to increase during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2011-2012, and the relatively high growth rates in 2015 and 2018, respectively.

OUC:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers.
b. Please identify the drivers which contribute to the decline in the growth rate of retail energy sales in 2012 and 2017, respectively.
SEC:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2011.
b. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2014, and the decline in the growth rate in 2017, respectively.

TAL:
a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.
b. Please explain why the divergence in the growth rates of customers and retail energy sales is projected to increase during the forecast period.
c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2013, and the decline in the growth rate in 2017, respectively.

RESPONSE:
FPL:

a. In 2011, FPL was still experiencing lingering effects from the Great Recession. Retail sales, even on a weather normalized basis, were down in 2011 as customer growth was beginning to rebound. In subsequent years as customer growth was returning to normal, retail sales growth lagged due to the impacts of the recently enacted national energy efficiency policy acts.

b. As noted in subpart (a) of this response, the national energy efficiency policy acts have had significant impacts on customer's electricity usage. These impacts, observed over the last decade or so, are expected to continue into the future. This is the primary reason for the divergence in growth between electric customers and electric retail sales. Organic efficiency improvements also account for some of this impact.

c. During 2011-2012, the economy was still attempting to bounce back from the Great Recession. On a weather normalized basis, retail sales were down each year from 2008 to 2011 with the exception of 2010, which was an extreme weather year for FPL's service territory. On a weather normalized basis, retail sales declined by -0.5% in 2011 and increased 0.4% in 2012, a trend consistent with the economic recovery.

   The decline in retail sales in 2017 is due to the impact of Hurricane Irma, which devastated FPL's service territory in September of that year.

GPC:

a. Similar to FPL, in 2012, Gulf Power was still experiencing lingering effects from the Great Recession. Retail sales, even on a weather normalized basis, were down in 2012 and 2013, as customer growth was continuing its rebound. In subsequent years as customer growth was returning to normal, retail sales growth lagged due to the impacts of the recently enacted national energy efficiency policy acts.

b. Similar to FPL, and as noted in subpart (a) of this response, the national energy efficiency policy acts have had significant impacts on customer's electricity usage. These impacts, observed over the last decade or so, are expected to continue into the future. This is the primary reason for the divergence in growth between electric customers and electric retail sales. Organic efficiency improvements also account for some of this impact.

c. The sharp fall in retail energy sales from 2011 to 2013 is primarily due to weather. 2010 energy sales were unusually high because 2010 was among the most severe weather years experienced in Gulf Power's service area. 2011 sales were also higher because of weather, though not to the same proportion as 2010. 2012 and 2013 sales were lower because of milder than normal weather. The decline in 2017 was due to milder than normal weather, and the increase in 2018 was due to severe weather. On a weather normalized basis, Gulf Power retail energy sales have been relatively flat.

QUESTION:
[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.

RESPONSE:
For both FPL and Gulf Power, load forecast sensitivities are only developed for Net Energy for Load (NEL) and Summer Peak. These sensitivities relate to the following schedules/columns below. Please see Attachment No. 1 and Attachment No. 2 to this response for the NEL and Summer Peak sensitivities for FPL and Gulf, respectively.

Net Energy for Load:	Schedule 2.3 column (19), Schedule 3.3 column (2), and Schedule 4 columns (5) and (7), Annual Values
Summer Peak:	Schedule 3.1 column (2), Schedule 4 columns (4) and (6), AUG

Sensitivities are not developed for the other Schedules or for other columns of the Schedules listed above.

Sensitivities were developed as follows. Using TYSPs back to 1989, forecast errors one to ten years ahead are computed for both NEL and Summer Peak for each TYSP. Based on these historical forecast error distributions, 75% confidence intervals of forecast errors are computed.

These one to ten year P75 forecast errors are applied to the forecasts of NEL and Summer Peak to derive the high and low forecast sensitivities.

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

RESPONSE:
Yes, the contribution of plug-in electric vehicles to FPL's peak demands and energy forecasts are included in the 2020 Ten-Year Site Plan. A description of the methodology used to develop the plug-in electric vehicle energy and demand forecasts can be found in FPL's response to Staff's First Data Request No. 19. The impact of plug-in electric vehicles is accounted for in the forecasting process as line item adjustments to FPL's NEL, summer, and winter coincident peak demands for the 2020 through 2029 time period. These contributions are incremental to totals for each from the end of 2019.

Yes, the contribution of plug-in electric vehicles to Gulf Power's residential energy forecast is included in the 2020 Ten-Year Site Plan. All charging was assumed to occur off-peak; therefore, no adjustments were made to the peak demand forecast.

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

RESPONSE:
FPL estimates penetration based on registration data purchased from the Florida Department of Motor Vehicles (DMV). FPL performs its estimation using a two-step process.

First, FPL reviews its PEV forecast for Florida annually, and updates as necessary, using the following methodology:

- FPL starts by forecasting the number of PEVs expected to be in use in the United States using a number of third party resources (*i.e.*, Bloomberg New Energy Finance, ExxonMobil, British Petroleum, and International Energy Agency) and discussions with knowledgeable professionals in the automotive industry.
- FPL then takes the number of registered PEVs in Florida and divides it by the number of vehicles in use nationally to derive Florida's current share of the U.S. market.
- This percentage share (~3.3%) is then multiplied by FPL's national forecast to get the Florida PEV forecast by year.

Second, FPL updates its PEV forecast for its service territory annually using the following methodology:

- FPL takes the number of registered PEVs in its service territory (DMV registrations) and divides it by the number of PEVs in use in Florida to derive FPL's current share of the Florida market.
- This percentage share (~63%) is then multiplied by the Florida PEV forecast (as described above) to get the annual FPL PEV service territory forecast.

The contribution to net energy for load from PEVs was derived from FPL's light duty vehicle (passenger car or "LDV") and truck and bus forecasts using an estimated kWh per vehicle. It was assumed that charging would take place 328 days per year for LDVs, 250 days per year for medium duty trucks, and 360 days per year for buses. FPL has been testing PEVs in both fleet and commuting applications since the early 1990s. For residential/commuting applications, experience indicates that on average LDVs can travel approximately 3.5 miles for every kWh of charge. A survey by the U.S. Department of Transportation conducted on the National Household Travel Trends in 2009 indicates that the daily average driving distance in the U.S. is approximately 36.1 miles (Reference: Santoso A., McGuckin, N., Nakamoto, H.Y., Gray, D., & Liss, S. U. S. Department of Transportation, Federal Highway Administration (2011). Summary of travel trends: 2009 national household travel survey (FHWA-PL-11-022), Table 14. P28.).

When this estimate is coupled with the FPL experience for electric vehicles in residential/commuting applications, it suggests the average daily charging energy required per LDV would be about 10.55 kWh per day (36.9 miles per day / 3.5 miles per kWh.) The kWh forecast was developed using this factor plus a similar forecast updated in 2016 for trucks and buses. Energy values are at the generator and have been adjusted for system losses.

For summer and winter peak demand, FPL estimated the most likely charging schedule for LDVs, trucks, and buses. The percent of each vehicle type charging during the summer and winter peak periods was then estimated in relation to the forecasted summer and winter peak demands. To create the summer and winter coincident peak demand impacts, the estimated number of vehicles (as previously described) was multiplied by the percentage of each vehicle type charging during FPL's peak hour and multiplied by the kW per vehicle type.

For Gulf Power, the source of the projected number of plug-in electric vehicles in Gulf Power's service area was a study produced by the Electric Power Research Institute (EPRI) in June 2018. The June 2018 EPRI study was also the source of the impact of plug-in electric vehicles on energy consumption. All charging was assumed to occur off-peak; therefore, no adjustments were made to the peak demand forecast.

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

RESPONSE:
Please see Attachment No. 1 for FPL's response and Attachment No. 2 for Gulf Power's response.

QUESTION:
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.

RESPONSE:
FPL does not currently offer any programs or tariffs related to plug-in electric vehicles (PEVs). However, FPL is currently evaluating such programs or tariffs and may seek Commission approval for such programs or tariffs in the future. Gulf Power currently offers two rate schedules for residential customers that relate to plug-in electric vehicles:

1.) A pilot rate schedule RSTOU "Residential Service – Time-of-Use" is offered as an alternative to Rate Schedule RS for service used for domestic purposes and electric vehicle charging at an individually metered dwelling unit suitable for year-round family occupancy containing full kitchen facilities.

2.) Rate Schedule RSVP, "Residential Service Variable Pricing – Limited Availability Rate – Electric Vehicle Charging." Gulf Power implemented a pilot program through the DSM plan approved by the FPSC in Order No. PSC-11-0114-PAAEG that encouraged residential customers to automatically charge electric vehicles overnight during the off-peak periods. This approach is consistent with the assumption that plug-in electric vehicles will not materially affect the peak demand forecast. Although this pilot program concluded in 2014, customers can still utilize the applicable Rate Schedule RSVP for off-peak electric vehicle charging.

a. FPL and Gulf Power customers can find information about electric vehicles (EVs) on the respective FPL and Gulf Power websites; FPL and Gulf Power will also provide information to customers that reach out with questions about EVs. In addition, FPL conducts education and outreach activities by participating in EV events (FPL participated in thirty-five events in 2019).

b. FPL launched the FPL Evolution pilot to support EV growth in Florida. The pilot will install more than 1,000 charging handles at stations across Florida, increasing the availability of public charging stations in Florida by approximately 50%.

The pilot focuses on three key areas: a) influences of infrastructure build-out on adoption; b) rate structures and demand models; and c) grid impacts of fast-charging. Installations will encompass different technologies, market segments and location types, including:

- Workplace and fleet charging at public and/or private workplaces
- Destination charging at well-attended locations
- Fast-charging in urban areas and at bus depots
- Fast-charging along highway corridors
    - In concert with Gov. DeSantis' announcement in July 2019 of his plan to expand Florida's EV infrastructure, FPL is building out a territory-wide fast-charging network to enable cross-state travel and reduce range anxiety

FPL has completed program set-up activities, such as developing a comprehensive RFP and site host agreement. As of March 31, 2020, FPL had 142 ports installed across 24 sites. FPL intends to seek cost recovery for these facilities in the Company's next general base rate case. Revenue generated by charging sessions is expected to reduce pilot operation, maintenance, and energy costs.

In April 2017, Gulf Power received FPSC approval to pursue a 5-year pilot program to assist customers by providing electric vehicle supply equipment (EVSE) and installations on customer property on a revenue neutral basis. There have been no installations under the program to date.

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

RESPONSE:
FPL and Gulf Power monitor the number of public charging station installations for plug-in electric vehicles (PEVs) in its service territory using the U.S. Department of Energy's Alternative Fueling Station Locator. On a periodic basis, the Companies extract data from the Alternative Fueling Station Locator for Florida. Pertinent data fields include but are not limited to number of ports, category of port (*e.g.*, level 2 or DCFC) and location of port. Additionally, FPL is monitoring the VW Mitigation Electric Vehicle Charging Infrastructure (EVCI) grant program administered by the Florida Department of Environmental Protection. Phase I of the EVCI will provide funding for 27 new fast charge locations across the state.

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

RESPONSE:
Neither FPL nor Gulf Power track home and/or business locations associated with ownership of electric vehicles. Therefore, the companies are not aware of any specific upgrades to the distribution system where electric vehicles were the contributing factor.

QUESTION:
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.

RESPONSE:
No, neither FPL nor Gulf Power has conducted or contracted any research to determine demographic and regional factors that influence the adoption of electric vehicles applicable to its service territory.

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

RESPONSE:
Neither FPL nor Gulf Power have any processes or technology in place to track individual EV charger installations at a customer's home.

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

RESPONSE:
Please see Attachment No. 1 to this response for FPL and Attachment No. 2 for Gulf Power.

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

RESPONSE:
Please see Attachment No. 1 to this response for FPL and Attachment No. 2 for Gulf Power.

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

RESPONSE:
Please see Attachment No. 1 to this response for FPL and Attachment No. 2 for Gulf Power.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

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

RESPONSE:
Please see Attachment No. 1 to this response.

a. For the 4x0 Crist CTs, construction is scheduled to begin in 2020, and the project is on track to support commercial operation in December 2021.

   For the Dania Beach Clean Energy Center Unit, construction of Unit 7 is underway and on track to support commercial operation in June 2022.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

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

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
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?

RESPONSE:
No renewable resources were cancelled, delayed, or reduced in scope within the past year.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
No renewable purchased power agreements were cancelled, delayed, or reduced in scope within the past year.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Two long-term power sale agreements were modified during the period. The Florida Public Utilities Company – Marianna agreement was extended for two additional years, until December 2026. The Homestead agreement was extended for an additional two years, until December 2026.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
FPL and Gulf Power's long history of evaluating and supporting the production of renewable energy is discussed comprehensively in Section III.F. of FPL and Gulf Power's 2020-2029 Ten-Year Site Plan. A summary of FPL and Gulf Power's recent actions to encourage use of renewable energy is provided in the paragraphs that follow.

Overview:
FPL began implementation of two DG PV pilot programs in 2015. The first DG PV program is a voluntary, community-based, solar partnership pilot to install new solar powered generating facilities. The program is at least partially funded by contributions from customers who volunteer to participate in the pilot and does not rely on subsidies from nonparticipating customers. The second program will result in approximately 5 MW of DG PV. The objective of this second program is to collect grid integration data for DG PV and develop operational best practices for addressing potential problems that may be identified. In addition, on March 3, 2020, the FPSC approved FPL's SolarTogether program and tariff, which will add a significant amount of new PV facilities under that new program. Lastly, Gulf Power has been actively involved in renewable energy resource research and development.

A brief description of these programs follows:

a. Voluntary, Community-Based Solar Partnership Pilot Program ("SolarNow"):

The Voluntary Solar Pilot Program, named FPL SolarNow, provides FPL customers with an additional and flexible opportunity to support development of solar power in Florida. The FPSC approved FPL's request for this three-year pilot program in Order No. PSC-14-0468-TRF-EI on August 29, 2014. The pilot program's tariff became effective in January 2015. The pilot was recently approved for a third extension for an additional year by the FPSC in Order No. PSC-2019-0544-TRF-EI on December 20, 2019 and is now scheduled to end at the close of 2020. This pilot program provides all customers the opportunity to support the use of solar energy at a community scale and is designed to be especially attractive for customers who do not wish, or are not able, to place solar equipment on their roof. Customers can participate in the program through voluntary contributions of $9/month. At the end of 2019, SolarNow enrollment had grown to 56,161 participants. This program has installed 74 projects located in 65 different locations within the FPL service territory. These projects represent approximately 2,432 kW-DC of PV generation.

b. C&I Solar Partnership Pilot Program:

This pilot program is conducted in partnership with interested commercial and industrial (C&I) customers over an approximate 5-year period. Limited investments will be made in PV facilities located at customer sites on selected distribution circuits within FPL's service territory.

c. SolarTogether – An FPL Shared Solar Program (FPL SolarTogether):

On March 3, 2020, the FPSC approved the FPL SolarTogether program and tariff, which approval includes the installation of 1,490 MW of new solar generation between 2020 and 2021 (FPSC Docket No. 20190061-EI). FPL has developed FPL SolarTogether as a cost-effective opportunity for customers to directly support the expansion of solar power without the need to install solar on their rooftop. Through FPL SolarTogether, customers have the option to subscribe to kilowatts ("kW") of solar capacity from dedicated cost-effective 74.5 MW solar power plants built for this program. Participating customers' monthly bills will include the cost of their subscribed capacity and credits that reflect the system savings generated by their subscribed capacity.

d. Gulf Power's Research & Development Efforts

Gulf Power has evaluated the potential for wind as a renewable energy resource in Northwest Florida through meteorological research along the coastal area and has also participated in joint efforts with Southern Company to research various PV technology evaluations. In addition, in 2015, Gulf Power conducted market research indicating customer interest in a renewable energy alternative to rooftop PV and after further research into various offerings across the industry, Gulf Power developed a subscription-based community solar program. Gulf Power received FPSC approval for in 2016 for a 1 MW facility in Northwest Florida, intended to facilitate construction once adequate subscriptions were secure. Customer interest to date has not been adequate to justify construction of the project.

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

RESPONSE:
FPL and Gulf Power were approached multiple times in 2019 by renewable energy developers with a wide range of potential projects in various stages of research or development. While most of these projects were solar photovoltaic, developers have also suggested possible landfill gas generation and small waste to energy facilities. However, none of these proceeded beyond an initial inquiry, and to FPL's and Gulf Power's knowledge, none have proceeded to construction.

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

RESPONSE:
Yes. FPL and Gulf Power consider universal (utility-scale) solar PV to contribute firm capacity towards FPL's and Gulf Power's Summer peaks, which typically occurs at/near the 4 to 5 p.m. hour in the Summer, but it does not make any significant contribution of firm capacity towards FPL's or Gulf Power's Winter peaks, which typically occurs at/near the 7 to 8 a.m. hour. Consequently, universal solar is assumed to have a non-zero firm capacity value in regard to Summer peak, but have a zero firm capacity value in regard to Winter peak. In FPL's and Gulf Power's resource planning work, the firm capacity value of solar is typically discussed as a percentage of the MW nameplate-AC rating of the solar facility. Past 2022, FPL and Gulf Power are modeled as one integrated system with a combined Summer peak and a combined Winter peak.

The percentage of a universal solar PV facility's nameplate rating that is assumed to be firm capacity can vary from one PV facility to the next due to various factors including, but not limited to, the following: the facility's geographic location, orientation of the PV panels, whether the PV panels are fixed tilt or tracking, the DC/AC ratio of solar equipment, the PV equipment used at the facility, and the amount of total solar installed on the system. For example, the average Summer firm capacity value for the four 2020 SoBRA PV facilities is approximately 61%. Among these four facilities, the Summer firm capacity values range from approximately 54% for the two fixed tilt facilities to approximately 69% for the two tracking facilities. In regard to the SolarTogether filing, the average Summer firm capacity value for the 20 solar PV facilities is approximately 50% with Summer firm capacity values ranging from approximately 43% to 53%.

FPL and Gulf Power develop the projected Summer firm capacity value for a new universal solar PV facility based, in part, on calculations that account for forecasts of the hourly solar insolation at the site and the resulting hourly output of the universal solar PV facility. These projections of Summer firm capacity value for similar future solar facilities may vary in the latter years of the 10-year planning period due to previous solar additions shifting the hour of the peak load that remains after the impacts of the previous solar facilities are accounted for.

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

RESPONSE:
FPL and Gulf Power have observed that energy storage technologies have decreased in cost, and battery energy storage is now an affordable option for consideration in some applications. The outlook for energy storage costs includes uncertainties, such as variable prices of constituent commodities and the demand for electric vehicles. FPL and Gulf Power continually assess the costs of energy storage systems when developing both short-term and long-term resource plans.

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

RESPONSE:
FPL and Gulf Power maintain awareness of progress in the development of alternate energy storage technologies including pumped hydro, thermal, flywheel, liquid air, and compressed air. The price of these alternates continues to not be competitive with lithium battery storage technology, and the total value that these systems provide is generally limited due to relatively lower efficiency. One emerging energy storage technology that FPL and Gulf Power are monitoring is electrolysis (the process of producing hydrogen from water using electricity). Using electrolysis, excess solar energy could be used to produce green hydrogen fuel; in the future, burning this hydrogen in existing gas turbines may be a cost-effective mechanism to further reduce carbon emissions.

QUESTION:
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).

RESPONSE:
There are only three sited storage facilities presented in FPL and Gulf Power's 2020 Ten-Year Site Plan. One is an approximate 409 MW battery storage facility that is projected to go into service in late 2021 or early 2022 in Manatee County near the existing Manatee Plant site. This battery and its location were selected based on plans to retire the existing Manatee Units 1 & 2 in that same time frame. With those generating units retired, there was a need for quick start capacity in that same area to account for potential Winter peak loads. The 409 MW storage facility will utilize the existing transmission infrastructure at the Manatee Plant site. In addition, the battery will be located close to FPL's existing 74.5 MW solar facility at the Manatee Plant site. This helps enable the battery storage to be charged by solar resources. FPL's plan is to charge the new battery storage facility solely by solar for at least the first 5 years of the life of the battery storage, thus enabling the battery storage facility to qualify for the renewable investment tax credit (ITC). This helps lower the cost of the battery for the benefit of FPL's customers.

FPL and Gulf Power's 2020 Ten-Year Site Plan also shows two additional 30 MW battery storage facilities being added in the same time period. One of these storage facilities is the Sunshine Gateway Energy Storage Center in Columbia County. The other storage facility is the Echo River Energy Storage Center in Suwanee County. The locations for these two storage facilities were selected for two primary reasons. First, universal solar facilities at/near the storage site will allow the storage facility to be fully charged by solar energy, thus enabling the storage facility to qualify for the renewable ITC. Second, the location of the quick start battery capacity will provide support for the FPL/Gulf transmission system in regard to potential Winter peak load conditions.

In addition, FPL is evaluating battery storage in both Small Scale and Large Scale (50 MW) pilot projects in order to analyze a variety of potential battery applications. Please see pages 132 through 135 of FPL and Gulf Power's 2020 Ten-Year Site Plan for a discussion of these pilot projects.

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

RESPONSE:
FPL continues to receive limited inquiries about energy storage technologies. To the extent requested by customers, FPL has provided technical and interconnection support. As of March 31, 2020, FPL is aware of 552 net-metering accounts that have installed battery storage systems. This data is self-reported by FPL customers as part of the net-metering application; no compulsory mechanism exists for FPL to track the installation of behind the meter energy storage systems.

Customer interest in energy storage for Gulf Power is also limited to general inquiries from residential customers desiring to utilize energy from a grid-connected solar photovoltaic system for back-up power if grid power is not available. Upon receiving such an inquiry, Gulf Power typically recommends that these customers review energy storage options with their installing contractors.

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

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all energy storage technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
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.

RESPONSE:
a. As described in Section III.F. of FPL and Gulf's 2020 Ten-Year Site Plan, FPL has deployed energy storage pilot projects under two distinct pilot programs to date: 1) Small Scale Storage Pilot Projects; and 2) Large Scale (50 MW) Storage Pilot Project. The objectives of the two pilot projects are to identify the most promising applications for batteries on FPL's system and to gain experience with battery installation and operation.

Small Scale Storage Pilot Projects:
In 2016 and early 2017, FPL installed approximately 4 MW of battery storage systems, spread across six sites, with the general objective of demonstrating the operational capabilities of batteries and learning how to integrate them into FPL's system. These small storage projects were designed with a distinct set of high-priority battery storage grid applications in mind. These applications include: peak shaving; frequency response; and backup power. In addition, these initial projects were designed to provide FPL with an opportunity to determine how to best integrate storage into FPL's operational software systems and how best to dispatch and/or control the storage systems.

To this end, FPL installed: (i) a 1.5 MW battery in Miami-Dade County primarily for peak shaving and frequency response; (ii) another 1.5 MW battery in Monroe County for backup power and voltage support; (iii) a relocatable 0.75 MW uninterruptible power supply (UPS) battery at the Tennis Center at Crandon Park in Key Biscayne for mitigation of momentary disruptions; and (iv) several smaller kilowatt-scale systems at other locations to study distributed storage reliability applications. All of these projects have been in service for more than 2 years and have yielded valuable information regarding the applications listed above.

Large Scale (50 MW) Storage Pilot Project:

The small scale energy storage pilot projects described above are complemented by up to 50 MW of additional battery projects that will be deployed. These pilot projects were authorized under the Settlement Agreement in FPL's 2016 base rate case. The 50 MW of batteries that will be deployed in this larger pilot project will expand the number of storage applications and configurations that FPL will be able to test, as well as making the scale of deployment more meaningful, given the large size of FPL's system.

The first two storage projects under this pilot involve pairing battery storage with existing universal PV facilities, and these projects went into service in the 1st Quarter of 2018. One of the projects is a 4 MW battery sited at FPL's Citrus Solar Energy Center, which captures clipped (curtailed) solar energy from the solar panels during high solar insolation hours, then releases this energy in other hours. The second of these two projects is a 10 MW battery at FPL's Babcock Ranch Solar Energy Center. This project is designed to shift PV output from non-peak times to peak times and also to provide "smoothing" of solar output and regulation services. These two projects are designed to enhance the operations of existing solar facilities that were installed in 2016 as outlined in FPL's base rate case Settlement Agreement. The data and lessons gathered from these two projects will result in more optimized design configurations for solar-paired battery projects as well as improved operational parameters for economic dispatch.

The third project, placed in-service in the 4th Quarter of 2019, is a 10 MW battery in Wynwood, a dense urban area that is close to downtown Miami. The project is designed to examine the use of batteries to support the distribution system with a focus on addressing grid, system, and customer challenges.

Three additional pilot projects are under development and expected to go in-service in 2020. One project entails deploying a 3 MW battery alongside an existing solar PV system to create a microgrid. The microgrid will be used for local resiliency and to provide additional grid services, including mitigation of disruptions potentially caused by solar in the distribution system. Another project currently under development will deploy up to 1 MW of Electric-Vehicle-to-Grid (EV2G) batteries using electric school buses that will be able to discharge electricity to the grid when needed. This project will explore the potential for utilizing electric vehicles as grid resources on FPL's system for the first time ever. Yet another project will site an 11.5 MW battery at the future Dania Beach Clean Energy Center Unit 7 to provide FPL an opportunity to test using battery storage for black start capability of large generating units.

b. Please see FPL and Gulf Power's response to subpart (a).

c. In regard to the remaining 11 MW of allowed storage capacity, FPL is continuing to evaluate which types of battery storage configurations and applications are projected to be the most meaningful to examine at this time. Potential project ideas are evaluated on an ongoing basis, considering current trends in the battery storage market, as well as the needs of FPL's system and the potential for projects of a given type to create future customer savings and value. Future Ten-Year Site Plans will provide additional information as new storage applications under the 50 MW Storage Pilot Project are selected.

   FPL will continue to annually provide information regarding the status of its storage pilot programs, and FPL's future plans for utilizing storage technologies, in its Ten-Year Site Plan filings and through its responses to Staff's Data Requests.

QUESTION:
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.

RESPONSE:
FPL is attributing firm capacity value to a number of battery energy storage facilities that are either currently in service or which are planned to be in service by the end of 2029. Table III.F.2. on page 135 of FPL and Gulf Power's Ten-Year Site Plan provides a list of storage facilities with in-service dates through 2022 and the firm capacity values attributed to each storage facility. In addition, Table ES-1 on page 16 of the 2020 Ten-Year Site Plan shows that additional storage facilities with firm capacity values of 200 MW in 2028, and 500 MW in 2029, are planned for the Gulf area of the integrated utility system. All of these battery storage additions are assumed to provide 100% of their nameplate rating as firm capacity and are accounted for as such in FPL's reserve margin and Loss of Load Probability (LOLP) analyses.

FPL has identified several challenges in the operation of the existing and planned batteries. Some of these are: the integration of the dispatch of the batteries into the Unit Commitment and Automatic Generation Control functions of the System Control Center, managing the state-of-charge level of these batteries during the day, and determining how to use these batteries such that their firm capacity value is preserved. FPL is currently working in developing systems and solutions to address these challenges. As with any facility, the operation of the energy storage facilities has associated maintenance that FPL will continue to monitor and seek opportunities for increased productivity and reduced cost.

QUESTION:
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.

RESPONSE:
FPL has two customer-focused solar programs – FPL SolarNow and SolarTogether. Future phases of the SolarTogether program may be evaluated for development and launch within the current planning period.

(i) Voluntary Solar Pilot Program, named FPL SolarNow, launched in 2015;

(ii) SolarTogether – An FPL Shared Solar Program, which the FPSC approved on March 3, 2020 (Docket No. 20190061-EI). Please see Section III.F. of FPL and Gulf Power's 2020 Ten-Year Site Plan for a detailed description of the programs.

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

RESPONSE:
FPL and Gulf Power understand the term "utility power technologies" to broadly mean the hardware, software, and communication technologies that either directly form part of generation and transmission systems or are used to operate them.

FPL and Gulf Power stay abreast of developments in those technologies in a variety of ways, including:

- Monitoring industry publications and journals, as well as news in the sector;
- Participating in industry trade groups and conferences;
- Communicating regularly with vendors on new offerings or system needs; and
- Where appropriate, testing out equipment on a limited basis to determine its capabilities and risks.

Pilot projects represent one of the ways to test out equipment under real operating conditions, while only committing limited resources to a particular technology path. As described in Section III.F. of FPL and Gulf Power's 2020 Ten-Year Site Plan, several generation-related pilot programs have been implemented over the years to learn about various technologies and potential program structures, including the Living Lab, the Voluntary Solar Pilot Program, the Commercial & Industrial Solar Partnership Program, the SHINES project with EPRI (Sustainable and Holistic Integration of Energy Storage and Solar PV), the Small Scale Storage Pilot Projects, and the Large Scale (50 MW) Storage Pilot.

Once a technology reaches the point of being commercially viable and potentially economic for customers, FPL and Gulf Power will consider it in its resource planning activities.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
FPL is interpreting this question to refer to planned generation units that have not yet begun construction. New generation units presented in FPL and Gulf Power's 2020 Ten-Year Site Plan that are not yet under construction include: are the 4x0 Crist CTs coming online by late 2021, approximately 469 MW of battery storage in 2022, the 2021 through 2029 PV additions, and the unsited energy storage additions in 2028 and 2029. The timelines for these generation additions are presented in Attachment No. 1 to this response. FPL currently has no future specific date or milestone that would constitute a "drop dead" date related to a decision to proceed with construction of these projects.

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

RESPONSE:
Please see Attachment No.1 to this response.

QUESTION:
[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.

RESPONSE:
In regard to new non-nuclear units presented in the 2020 Ten-Year Site Plan, the estimated economic life is generally assumed to be 30 years for PV facilities and 40 years for new CC and CT facilities. These assumptions were used in the economic analyses that were performed that led to the 2020 Ten-Year Site Plan filing. For new nuclear units, FPL assumes a minimum operating life of 40 years and a more realistic 60-year operating life.

For FPL's existing nuclear units, the current dates for the end of the operating licenses for each unit are: July 19, 2052 for Turkey Point 3; April 10, 2053 for Turkey Point 4; March 1, 2036 for St. Lucie 1; and April 6, 2043 for St. Lucie 2. Therefore, a non-binding estimate of the retirement date for these existing nuclear units would normally be these end-of-operating-license dates. Please note that the operating license expiration dates for Turkey Point Units 3 & 4 reflects a 20-year Subsequent License Renewal (SLR) approved by the Nuclear Regulatory Commission (NRC) in December 2019.

FPL and Gulf Power do not have specific firm retirement dates for all of their units. FPL has an estimated retirement date for Manatee 1 and 2 and Scherer 4 of fourth quarter 2021. Gulf has estimated retirement dates, shown below, for only the following units:

- Crist 4 Fourth quarter 2024
- Crist 5 Fourth quarter 2026
- Daniel 1 and 2 Fourth quarter 2023
- Lansing Smith A Fourth quarter 2027
- Pea Ridge 1, 2 and 3 Second quarter 2025
- Perdido 1 and 2 Fourth quarter 2029

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

RESPONSE:
There are no FPL or Gulf Power steam units that are currently potential candidates for repowering to operation as Combined Cycle units.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Attachment No. 1 to this response identifies bulk transmission lines that must be certified under the Transmission Line Siting Act (TLSA) for the FPL and Gulf Power service areas. There is one such line in FPL's service area, but none in Gulf Power's service area at this time, for this 10-year reporting period.

QUESTION:
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.

RESPONSE:
FPL and Gulf Power operate their Electric Generating Units in compliance with all applicable federal, state, and local regulations that limit impacts to air and water quality. Compliance with permit requirements requires FPL and Gulf Power to monitor and operate facilities within specific allowable limits at all times. Environmental restrictions relating to air or water quality and emissions from facility operations are incorporated within those permits, and operating procedures are implemented at the facilities to ensure compliance. Regulatory changes, which impose environmental restrictions, are ultimately incorporated within the operating permits as changes to existing limits or new requirements. Compliance with existing permits and new requirements is continuous, on a unit and fleet-wide basis. Changes to facility operations to comply with existing and new requirements are included in both existing and planned operating costs, and are reflected as unit generating performance impacts that are used for unit dispatch and production costing modeling. Impacts to operation of facilities include, but are not limited to, the installation of new pollution controls (which may impact unit efficiency, and generation output), purchase of emission allowances, changes to fuels that can be combusted, and use of alternative products where applicable.

FPL and Gulf Power have evaluated the impact of all existing regulations on the operation of their generating units and have developed compliance plans to limit, or avoid, impacts to generating unit operation. During the 2019 period, impacts from air and water environmental restrictions to generating units included the following environmental requirements: 1) use of "environmental" natural gas during startup of FPL's oil/gas steam units; 2) compliance with Cross State Air Pollution Rule (CSAPR) through the use of emission allowances and the operation of the Selective Catalytic Reduction (SCR) and Flue Gas Desulphurization (FGD) on controlled units; 3) compliance with the Mercury and Air Toxics Standards (MATS) rule and the Georgia Multi-Pollutant Rule requirements at Scherer through operation of sorbent injection/bag-house control for mercury and operation of SCR and FGD (Scrubber"), and 4) operation of temporary heaters at Cape Canaveral plant and Fort Myers plant when needed to provide warm water for manatees in compliance with an agency-approved manatee protection plan.

During the 2020 through 2029 period, FPL and Gulf Power are aware of the following final and evolving regulations which could potentially affect generating unit dispatch or retirement including: 1) the Affordable Clean Energy rule 2) EPA's repeal of the 2015 definition of Waters Of The United States (WOTUS) and pre-publication of the 2020 "Navigable Waters Protection

Rule", 3) EPA's review of the Coal Ash Rule, and 4) the EPA promulgation of the new Steam Effluent Limitation Guidelines rule which is expected to be final in late 2020. Some of these rules have been challenged and are currently in litigation. The 111(d) rule has been stayed pending the outcome of the litigation.

On April 29, 2014, the U.S. Supreme Court reversed the DC Circuit Court of Appeals decision on CSAPR and remanded the rule back to the lower court. In accordance with the December 23, 2008 Court decision, CAIR remained in effect until a replacement rule was finalized by the EPA. On November 21, 2014, EPA issued a ministerial rule that aligns the dates in the CSAPR rule text with the revised court-ordered schedule, including 2015 Phase 1 implementation and 2017 Phase 2 implementation. In a separate ministerial action, EPA issued a NODA, as required by CSAPR, which aligns the final CSAPR default allowance allocation years with the revised court-ordered schedule implementing revisions to CSAPR and tolling the compliance deadlines by three years. The annual allowance programs for CSAPR Phase 1 implementation began January 1, 2015, with Phase 2 beginning January 1, 2017. On November 16, 2015, EPA proposed the CSAPR Update Rule to implement reductions that it deemed necessary to address the 2008 Ozone standard. In its evaluation of Florida's impacts on downwind ozone nonattainment and maintenance areas, EPA determined that Florida electric generating units no longer have a significant impact to air quality in those areas and has removed Florida from the CSAPR program in 2017. FPL's ownership share of Scherer Unit 4 and Gulf Power's ownership share of Scherer Unit 3 in the State of Georgia remain under CSAPR for the annual and ozone season programs. Daniel in Mississippi also remains under CSAPR. In December 2018, the EPA finalized the determination that CSAPR satisfies the Good Neighbor obligations for the 2008 ozone standard. The outcome of ongoing CSAPR litigation is unknown at this time and could have an impact on the State of Mississippi's allowance allocations under the CSAPR seasonal NOX program.

The other final air regulation for which FPL and Gulf Power have compliance obligations is the Mercury and Air Toxics Standards ("MATS") rule. The rule finalizes the coal and oil-fired Maximum Achievable Control Technology ("MACT") standards that the EPA had proposed to reduce emissions of Hazardous Air Pollutants ("HAPs"). On April 15, 2014, the DC Circuit Court of Appeals upheld the final MATS rule denying petitioners challenges that EPA improperly promulgated the rule. FPL does not anticipate any adverse impacts to operation of its generating units to comply with the MATS rule at this time. FPL began its planned installation of ESPs on its 800 MW oil fired units at Manatee and Martin plants in 2011 to prepare for compliance within the required time period using existing planned outages and additional system capacity additions from the modernization projects. Installation of ESPs on the Manatee Units 1 and 2 and Martin Units 1 and 2, along with all associated acceptance tests, were completed by February 2015. Gulf Power's Crist plant complied with the MATS rule with transmission upgrades and the co-benefit reductions of HAPs through previous installation of SNCR, SCR and Scrubbers on the Crist fossil steam generating units. Daniel installed scrubbers, bromine injection, activated carbon injection and scrubbers. Installation of controls at Scherer

for compliance with the Georgia Multi-Pollutant rule provided the necessary emission reductions that are needed for MATS compliance. The well-controlled coal-fired Indiantown Cogeneration ("ICL") facility that FPL purchased in 2017 has also demonstrated the ability to meet all applicable MATS emission specifications. In addition to Continuous Mercury Emission Monitoring systems that have been installed for compliance with MATS at Scherer, all three units will also require quarterly particulate matter emission tests instead of the previous annual requirement. As of April 19, 2018, the ICL, and Scherer coal-fired generating units are subject to the rule's emissions standards and are currently demonstrating compliance. In January 2018, JEA and FPL retired the SJRPP coal-fired facility, and in December 2018, FPL retired Martin Units 1 and 2. Dismantlement and demolition of the facilities is underway, and they are no longer subject to any of the MATS, CSAPR, or GHG regulations. Additionally, FPL has announced its intent to retire Manatee Units 1&2 by 2022.

On July 8, 2019, the Affordable Clean Energy (ACE) rule was published to replace the 2015 Clean Power Plan. The rule applies only to coal fired electric generating units and does not include gas fired combustion units. The rule establishes guidelines requiring states to establish their own unit-specific standards to address greenhouse gas emissions within three years. These standards are unit specific heat rate improvements (HRI) based on the best system of emission reduction (BSER). States have three years from the publication to develop standards and are expected submit plans in 2022. The FPL and Gulf Power fleets include a limited number of coal fired units, including, Indiantown Cogeneration, Crist Units 4-7, partial ownership in Scherer Units 3 and 4, and partial ownership of Daniel Units 1 and 2. Scherer 3 and 4 have already installed the heat rate improvements identified in the ACE rule prior to its promulgation and will not be impacted by any state standards. In the 2020 Ten Year Site Plan, FPL announced its intent to retire the Indiantown Cogeneration by the end of 2020 and its partial ownership of Scherer Unit 4 by 2022. Crist Units 4-7 are undergoing projects to convert to natural gas fired with coal as a back-up fuel. The gas improvement projects on Crist Units 6 and 7 are expected to be completed by the end of 2020, and Crist Units 4 and 5 are already 100% gas capable. By January 2022, Gulf Power intends to retire coal generating capability at all 4 Crist units removing them from applicability of the ACE rule and the MATS rule. These units are expected to be exempt from HRI installations. EPA has encouraged states to consider the remaining useful life of units in developing standards. Daniel Units 1 and 2 will be retired in 2024, and we believe it is unlikely that these units will be impacted. At this time, Florida has not finalized any standards but is expected to submit a state plan in 2022.

The final 316(b) rule for Cooling Water Intake Structures at Existing Facilities (316(b) Rule) was published August 15, 2014, and became effective October 14, 2014. The final 316(b) Rule requires each affected facility to develop comprehensive studies and compliance plans to determine the appropriate compliance measures to achieve the Best Technology Available ("BTA") to minimize adverse environmental impacts and meet entrainment and impingement mortality reduction requirements. The timeline to complete these studies and plans, along with ultimate agency review and approvals, is being completed during each facility's next 5-year

permit cycle following the Rule's effective date. All studies for FPL plants will be completed and submitted by mid-2021. Until these studies and compliance options are finalized and reviewed, it is not possible to determine what the exact compliance controls and costs will be for each power plant affected by the rule. Generally, the implementation of the 316(b) Rule must take into account the site specific characteristics of each generating facility, the water body types that supply the intake structure and the types of aquatic organisms in the vicinity.

The final 316(b) Rule states that a variety of technological and operational measures, including cooling towers, may qualify as BTA to reduce the adverse environmental impacts of cooling water intake structures. Although the addition of cooling towers could be considered as BTA at some facilities, they may not be feasible at many locations due to impacts to endangered species (such as manatees), spatial limitations, and disproportionate costs versus benefits; therefore, cooling towers were not declared BTA by EPA for all facilities. FPL operates ten (10) power plants in Florida to which the 316(b) Rule is applicable. Six (6) plants utilize once-through cooling water systems; while four (4) utilize closed-cycle recirculating systems (*i.e.*, cooling towers or cooling ponds). For the six plants utilizing once through cooling water systems, the 316(b) Rule will require comprehensive studies to determine the appropriate BTA to meet the 316(b) Rule requirements. If any of the six units is required to meet the BTA requirements by installing cooling towers, the cost would be very high; up to hundreds of millions of dollars per site. However, based on FPL's review of the 316(b) Rule and preliminary data that has been collected, and although it is much too early to make a final determination, we anticipate that most FPL facilities will not be required to retrofit their cooling systems with cooling towers and will be able to meet the determinations of BTA by installing alternative controls. These alternative controls could include fine mesh intake cooling water screens to minimize entrainment and modified traveling screens with fish return systems to meet the impingement mortality reduction standard.

For the plants utilizing closed-cycle cooling, FPL does not anticipate that additional technologies or operational changes to minimize impingement mortality or entrainment will be required. Some studies are required for these facilities, but they are relatively inexpensive and any capital improvements required at these facilities would be minimal.

FPL also owns two (2) Gulf Power power plants with a total of six generating units that are subject to the 316(b) Rule. Two (2) of the units use once-through cooling water systems, while three units utilize closed-cycle recirculating systems (*i.e.*, cooling towers). Gulf Power also has co-ownership of Daniel Units 1 and 2 in Mississippi. Daniel has a closed cycle cooling system that is expected to meet 316(b) requirements. As with the FPL plants, we anticipate minimal impacts from the plants using closed-cycle recirculating systems. The plants using once-through cooling systems are anticipated to install alternative controls to comply with the 316(b) Rule.

Gulf Power and FPL have co-ownership in Scherer Unit 3 and 4 respectively. Scherer Units 3 and 4 use cooling towers to reduce the impacts of impingement mortality and entrainment

mortality as required under the 316(b) Rule. Here, just as with the FPL plants that utilize closed-cycle cooling, we anticipate the impacts to be relatively small.

EPA published the final Coal Combustion Residuals ("CCR") rule on April 17, 2015. This rule regulates the disposal of combustion byproducts. The WIIN Act passed in 2016 provided for approval of State CCR regulatory programs. USEPA then issued revised regulations in 2018 which extended the deadline to initiate closure of certain CCR units to October 31, 2020. USEPA has proposed accelerating this date to August 30, 2020. FPL's coal units at SJRPP and Scherer are affected by this rule and now have disposal, closure and post-closure requirement(s) for bottom ash, fly ash and gypsum while FPL's Indiantown Cogeneration coal-fired unit is not affected by the rule. FPL and the co-owners of its coal-fired generating units affected by this rule are conducting the required engineering evaluations, inspections, and monitoring, developed closure plans and have initiated construction for closure and new CCR management units as required. Gulf Power's CCR storage areas at Crist and Smith are affected by the rule and have ongoing compliance monitoring in place as well as post-closure requirements. Gulf Power is currently in the process of closing the Smith and Scholz ash ponds. The Scholz CCR requirements are addressed through the plant's NPDES permit issued by the FDEP. Gulf Power is also the co-owner of coal-fired units in Mississippi and Georgia affected by this rule, these sites have initiated ash pond closure activities and constructing new CCR management systems. FPL and Gulf Power do not anticipate any adverse impacts to operation of its generating units to comply with the CCR rule at this time.

The EPA and the U.S. Army Corps of Engineers (collectively, the Agencies) published the final Waters of the United States (WOTUS) rule (also referred to as "Navigable Waters Protection Rule") on January 23, 2020. The final rule is generally consistent with the Agencies' 2019 proposal which significantly narrows the jurisdiction of the CWA when compared to the Agencies' 2015 WOTUS rule, which was officially repealed in December 2019. The final rule should become effective 60 days after publication in the Federal Register. Until then, the pre-2015 definition of WOTUS will remain in effect. The final rule eliminates the stand-alone interstate waters category and identifies four categories of federally regulated waters; 1) territorial seas and traditional navigable waters; 2) perennial and intermittent tributaries to those waters; 3) certain lakes, ponds, and impoundments; and 4) wetlands adjacent to jurisdictional waters. The final rule defines "adjacent wetlands" as wetlands meaningfully connected to other jurisdictional waters (*e.g.*, by directly abutting or regular surface water connection). The final rule also identifies twelve categories of non-WOTUS features (including ephemeral waters, groundwater, many ditches, and waste treatment systems). The final rule's categories and definitions are much more reasonable and functional compared to the 2015 WOTUS rule. However, the waste treatment system exclusion may be challenged and it is important to note that the 2015 WOTUS rule could come back if the 2019 Repeal and Replacement rules are rescinded during litigation.

The final Steam Electric Effluent Limitation Guidelines (ELG) rule was promulgated and became effective on January 4, 2016. It was adopted by the Florida Department of Environmental Protection on March 30, 2017.

Title 40 Code of Federal Regulations Part 423, which was promulgated under the authority of the Federal Clean Water Act, limits the discharge of pollutants into navigable waters and into publicly owned treatment works by existing and new sources of steam electric power plants. The previous version of the ELG was published in the Federal Register on November 19, 1982. On September 15, 2009, the EPA announced that they would undertake rulemaking to revise the ELG rule because, "current regulations, which were issued in 1982, have not kept pace with changes that have occurred in the electric power industry over the last three decades."

The final ELG rule, while it is applicable to all facilities that utilize steam for electrical generation (*i.e.*, have a steam turbine) regardless of fuel type, mainly focuses on wastewater generated by coal-fired power plants. The ELG Rule sets limits on the amount of toxic metals and other harmful pollutants that steam electric power plants are allowed to discharge in several of their more significant sources of wastewater.

The final ELG rule is applicable to nine FPL owned or partially owned and nine Gulf Power owned or partially owned steam generation facilities. It is not applicable to any of the combustion turbine-only powered facilities or facilities that do not require an NPDES permit. There will be virtually no impact on the steam generation facilities which are fueled by natural gas/light oil or nuclear. Manatee Plant Units 1 and 2 can burn heavy (#6) oil so these facilities may be required, if they are still operating and burning heavy oil following the next NPDES permit renewal in 2021, to make some minor operational changes to achieve compliance with the ELG rule. These changes may be required since wastewater is generated when fly ash is sluiced to treatment ponds when the units are burning heavy oil.

The most significant impacts of the final ELG Rule will be realized by coal burning facilities, including Scherer Units 3 and 4. The final ELG rule required compliance to occur during the 2018-2023 timeframe. However, on November 22, 2019, a "new Rule", which should become final in late 2020, was public-noticed in the Federal Register. This new Rule allows a two-year extension for the applicability dates for FGD (scrubber) wastewater effluent. The new compliance date is no later than December 31, 2025. The deadline for compliance with a zero discharge for bottom ash transport water requirement remained December 31, 2023. Plant Scherer Units 3 and 4 are already in compliance with that portion of the new Rule as dry-handling systems for bottom ash have already been installed. This new Rule, as proposed, would also allow exemptions for units that agree to retire by 2028. Facilities that chose a "Voluntary Incentive Program" would need to meet more stringent discharge limits, but the compliance deadline would be delayed until 2028. Currently, Scherer is in the process of studying the rule and determining the best avenue for compliance with the scrubber wastewater portion. Costs for modifications to achieve compliance with the scrubber Wastewater limitations

may include capital and O&M costs, and may be significant. The decision regarding the best option for compliance will be made in 2021. However, in the 2020 Ten Year Site Plan, FPL announced its intent to retire its partial ownership of Scherer Unit 4 by 2022, so those costs should not impact FPL. Gulf Power does not anticipate the need to install additional controls for ELG compliance at Crist due to plans to convert the units to gas prior to the ELG compliance deadline for bottom ash transport water. Gulf Power has not projected separate ELG compliance costs for its ownership portion of Daniel because the Daniel bottom ash conversion projects needed for ELG compliance are being installed in 2020 for compliance with the CCR rule. Both plants are already in compliance with the scrubber Wastewater compliance requirements as they discharge to underground injection wells rather than through an NPDES outfall, so the ELG Rule does not apply.

The several environmental regulations which FPL anticipates becoming final in the 2020 through 2029 period include: 1) Regional Haze Reasonable Further Progress requirements for visibility improvement; 2) SIP revisions for Startup/Shutdown/Malfunction ("SSM") excess emissions; and 3) new and future revisions to the National Ambient Air Quality Standard ("NAAQS") for the criteria pollutants. While FPL does not yet know what requirements would be included in each final rule, it has made a preliminary determination using publicly available information that the anticipated compliance requirements for FPL would not impact any of the company's generating unit capability or reliability to meet projected system demand. However, the impact of the Greenhouse Gas Performance Standards for Existing Sources on the operation and dispatch of FPL's fossil fuel fired electric generating units is uncertain until a final rule is published.

QUESTION:
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? Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the costs for the current planning period.
f. If the answer to any of the above questions is not available, please explain why.

RESPONSE:
a. In October 2015, the EPA's final rule for New Source Performance Standards ("NSPS") governing carbon dioxide ("CO_2") emissions from new fossil fuel-fired electric generating units became effective. This rule should have no impact on FPL or Gulf Power facilities since (i) the FPL and Gulf Power new combined-cycle gas facilities routinely have GHG emission rates below the NSPS limits, (ii) the FPL and Gulf Power new simple-cycle gas-fired peakers will meet the NSPS limits for non-baseload generating units by using designated clean fuels and qualifying for the non-base load natural gas-fired combustion turbine category, (iii) FPL and Gulf Power solar generating facilities do not emit GHGs and are unaffected by the rule, and (iv) neither FPL nor Gulf Power has any current plans to build new coal-fired facilities. Additionally, on March 28, 2017, EPA filed with the U.S. Court of Appeals for the D.C. Circuit a motion to hold the challenges to the NSPS case in abeyance while EPA undertakes review of the rule and forthcoming rulemaking as required by the President's Executive Order for review of the rule.

On July 8, 2019, the Affordable Clean Energy (ACE) rule was published to replace the 2015 Clean Power Plan. The rule applies only to coal fired electric generating units and does not include gas fired combustion units. The rule establishes guidelines requiring states to establish their own unit-specific standards to address greenhouse gas emissions within three years. These standards are unit specific heat rate improvements (HRI) based on the best system of emission reduction (BSER). States have three years from the publication to develop standards and are expected submit plans in 2022. The FPL and Gulf Power fleets include a limited number of coal fired units, including, Indiantown Cogeneration, Crist Units 4-7, partial ownership in Scherer Units 3 and 4, and partial ownership of Daniel Units 1 and 2. Scherer Units 3 and 4 have already installed the heat rate improvements identified in the

ACE rule prior to its promulgation and will not be impacted by any state standards. In the 2020 Ten-Year Site Plan, FPL announced its intent to retire the Indiantown Cogeneration by the end of 2020 and its partial ownership of Scherer Unit 4 by 2022. Crist Units 4-7 are undergoing projects to convert to natural gas fired with coal as a back-up fuel. The gas improvement projects on Crist Units 6 and 7 are expected to be completed by the end of 2020, and Crist Units 4 and 5 are already 100% gas capable. These units are expected to be exempt from HRI installations. EPA has encouraged states to consider the remaining useful life of units in developing standards. Daniel Units 1 and 2 will be retired in 2024, and we believe it is unlikely that these units will be impacted. At this time, Florida has not finalized any standards but is expected to submit a state plan in 2022.

Subparts (b) through (e) are not applicable.

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

RESPONSE:
FPL and Gulf Power do not anticipate any system reliability impacts associated with the compliance requirements of the MATS Rule, CSAPR Rule, CWIS Rule, CCR Rule, EPA's Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, ACE Rule or the ELGs, including generating unit reliability, transmission system constraints, and installation of controls on units not regulated by these rules, nor do FPL or Gulf Power anticipate early retirement of units in response to these regulations. FPL and Gulf Power evaluate the potential impacts to unit operation based on proposed and draft rule language that identifies compliance requirements for environmental regulations.

a. For compliance with the MATS rule, FPL installed ESPs on the Martin and Manatee oil-fired steam 800 MW units, Sorbant Injection and baghouse on Scherer Unit 4, and existing controls for the coal fired Indiantown Cogeneration facility purchased by FPL in 2016 will comply with the emission standards established by the rule. FPL retired the Cedar Bay coal fired generating unit in 2016 and has completed demolition of the unit. Additionally, SJRPP Units 1&2 and Martin Units 1&2 were retired in 2018, effectively removing them from the MATS compliance requirements at this time. In its 2020 Ten-Year Site Plan filing, FPL provided notice of its intent to retire Manatee Units 1&2 in late 2021 and its intent to retire Indiantown Cogeneration by the end of 2020 and retire Scherer Unit 4 on, or before, January 2022. FPL has not identified any potential impacts to the reliability or capability of its units, or transmission system, as a result of the MATS compliance plan. Gulf Power completed transmission upgrades in 2015 that were needed to address forecasted reliability impacts at Crist and Smith due to the new MATS regulation.

b. FPL's and Gulf Power's CSAPR compliance plan has not, and will not, impact generating unit or system reliability or capability. With EPA's promulgation of the CSAPR update rule, the FPL and Gulf Power Florida based generating units are no longer subject to the rule requirements. FPL's ownership share of Scherer Unit 4 and Gulf Power's ownership share in Scherer Unit 3 and Daniel Units 1 and 2 will remain subject to the rule but sufficient allowances to comply with the rule requirements are on hand or readily available. In addition, in its 2020 Ten Year Site Plan, FPL/Gulf Power announced plans to retire FPL's ownership portion of the Scherer 4 unit by 2022 and to retire Gulf Power's ownership portion of the Daniels Units 1 & 2 in January 2024. However, should future actual conditions vary significantly from projection assumptions, unit reliability impacts could occur though no transmission system impacts are projected to occur as a result.

c. FPL and Gulf Power have evaluated the requirements for the CWIS Rule and have developed anticipated costs associated with the various compliance requirements. Impacts for the CWIS Rule, which became final on October 14, 2014, will vary based on the level of modifications required by conclusions based on subsequent studies and negotiations with Florida Department of Environmental Protection ("FDEP"), with possible input from the U.S. Fish and Wildlife Service, National Marine Fisheries Service (Services), and EPA. Should, as is currently expected, modified Ristroph-type traveling screens and fish return systems, along with the possibility of fine mesh screens, be required for most facilities (those without cooling ponds or cooling towers), the impacts should be minimal where installations would be accommodated during scheduled maintenance outages. FPL and Gulf Power have identified no system reliability impacts that would be anticipated to occur as a result of the expected rule requirements for CWIS.

d. For the CCR rule, FPL and Gulf Power have evaluated anticipated compliance requirements based on EPA and industry comments for the April 17, 2015 final rule. The rule did continue the regulation of CCRs as non-hazardous waste. However, the CCR rule established new location restrictions, disposal unit design standards, and numerous compliance plans, inspections, and certifications phased in over three years applicable to FPL's co-owned coal units. As a result of the new location and groundwater standards, Gulf Power, FPL and their co-owners initiated preparations in 2018 for closure of the Scherer unlined Surface Impoundment (ash pond) and construction of a new landfill meeting the new design standards. FPL and its co-owners will initiate closure of the SJRPP landfill following removal of all CCR from impacted components during demolition, which began in the summer of 2019. The Indiantown Cogeneration facility, with a planned retirement date by the end of the 4th Quarter of 2020, manages CCR offsite and is therefore not subject to the rule. Gulf Power is currently in the process of closing the ash ponds at Smith and Scholz and closure of Gulf Power's co-owned ash pond at Daniel is scheduled to begin fall 2020. Actions for compliance with these changes in the regulatory standards for management of CCRs for FPL's co-owned coal units and Gulf Power's units are not anticipated to create impacts to the reliability of any generating unit or FPL's system.

e. FPL's Port Everglades Energy Center ("PEEC") received an air construction permit from DEP for the PSD pollutants and EPA for GHGs. EPA established a BACT limit for the PEEC facility at 830 lb CO_2 equivalent/MWh (net) while EPA's GHG limit performance standard for new gas fired units is 1000 lb/MWh (gross). Following the United States Supreme Court's decision on EPA's Tailoring rule, FPL submitted a request to rescind the GHG permit as not legally required since the Unit 5 netted emissions did not require a PSD permit. Subsequently, FPL submitted and received final Air Construction Permits for the construction of the Okeechobee Energy Center and Dania Beach Energy Center combined cycle units, which contain GHG limits of 850 lb CO_2 equivalent/MWh (net) that FPL will be able to comply with during normal operation of the units in addition to the EPA 1000 lb/MWh federal limit. Accordingly, FPL does not anticipate any unit reliability impacts or system transmission impacts associated with the GHG rule. In addition, FPL also does not anticipate any additional capital or O&M expenditures will be needed to comply with the GHG performance standard for future units.

   Gulf Power submitted and received final Air Construction permits for the construction of the Crist four simple cycle combustion turbines. The permit contain GHG limits that Gulf Power will be able to comply with during normal operation of the units.

f. On July 8, 2019, the Affordable Clean Energy (ACE) rule was published to replace the 2015 Clean Power Plan. The rule applies only to coal fired electric generating units and does not include gas fired combustion units. The rule establishes guidelines requiring states to establish their own unit-specific standards to address greenhouse gas emissions within three years. These standards are unit specific heat rate improvements (HRI) based on the best system of emission reduction (BSER). States have three years from the publication to develop standards and are expected submit plans in 2022. The FPL and Gulf Power fleets include a limited number of coal fired units, including, Indiantown Cogeneration, Crist Units 4-7, partial ownership in Scherer Units 3 and 4, and partial ownership of Daniel Units 1 and 2. Scherer Units 3 and 4 have already installed the heat rate improvements identified in the ACE rule prior to its promulgation and will not be impacted by any state standards. In the 2020 Ten Year Site Plan, FPL announced its intent to retire the Indiantown Cogeneration by the end of 2020 and its partial ownership of Scherer Unit 4 by 2022. Crist Units 4-7 are undergoing projects to convert to natural gas fired with coal as a back-up fuel. The gas improvement projects on Crist Units 6 and 7 are expected to be completed by the end of 2020, and Crist Units 4 and 5 are already 100% gas capable. These units are expected to be exempt from HRI installations. EPA has encouraged states to consider the remaining useful life of units in developing standards. Daniel Units 1 and 2 will be retired in 2024, and we believe it is unlikely that these units will be impacted. At this time, Florida has not finalized any standards but is expected to submit a state plan in 2022.

g. For compliance with the ELGS, Scherer Units 3 and 4 have already installed dry ash handling systems for fly ash and bottom ash so no further action is required. Eventually a treatment system for the discharge of FGD (scrubber) wastewater from Scherer Units 3 and 4, which are partially owned by Gulf Power and FPL respectively, is expected. However, in the 2020 Ten Year Site Plan, FPL announced its intent to retire its partial ownership of Scherer Unit 4 by 2022, so there will be no impact to FPL system reliability or capability. Gulf Power does not anticipate the need to install additional controls for ELG compliance at Crist due to plans to convert the units to gas prior to the ELG compliance deadline for bottom ash transport water. Gulf Power has not projected ELG compliance costs for its ownership portion of Daniel because the Daniel bottom ash conversion projects needed for ELG compliance are being installed in 2020 for compliance with the CCR rule. Neither of these modifications will impact generating unit or system reliability or capability.

QUESTION:
Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

RESPONSE:
Please see Attachment No. 1 to this response.

QUESTION:
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.

RESPONSE:
Some examples of currently approved environmental compliance investments which help to mitigate future investments include, but are not limited to:

- Compliance plans implemented for CAIR and approved for recovery are sufficient to meet CSAPR rule requirements. FPL and Gulf Power believe their previous CAIR and CAMR/MATS projects, and present CSAPR compliance plan, will meet the current SO_2, NO_2, fine particle, and ozone National Ambient Air Quality Standards ("NAAQS") requirements.
- Installation of Sorbent Injection / Baghouse, SCR, and Scrubber on Scherer Unit 4 for compliance with the Georgia Multi-Pollutant Rule mitigated most of the potential costs for compliance with the Mercury and Air Toxics Standards ("MATS") and with requirements associated with both the Clean Air Interstate Rule and the Cross State Air Pollution Rule.
- The SCRs and SNCRs previously installed for NOx emission reduction as part of Gulf Power's Air Quality Compliance Program may assist with potential future NAAQS and CSAPR regulations.
- Installation of PV solar projects and a solar thermal project at Martin Plant totaling more than 1000 MW capacity help lower FPL's fleet-wide GHG emissions further reducing exposure to future GHG rules. FPL has initiated a robust plan to install 30 million solar panels by 2030. These projects will further reduce FPL's fleet-wide GHG emissions. In addition, FPL's current and planned expansion of the implementation of battery storage projects allows the storage of renewable generation to displace higher emitting peaking generation during system peak demand periods.
- Modified traveling screens with fish return systems have been installed as part of the modernizations of Cape Canaveral Energy Center, Riviera Beach Energy Center, and Port Everglades Energy Center to avoid retrofit costs that would be required to comply with the CWIS Rule (Section 316(b) of CWA) in the future.
- Studies required by the CWIS Rule (Section 316(b) of CWA).
- The use of the approved Underground Injection Control (UIC) systems for the scrubber project at Crist and reclaimed water project at Smith will help reduce costs for future regulations such as Coal Combustion Residual Rule (CCR). The program also has the potential to mitigate costs for other proposed federal regulations.

- The closure in-place of coal combustion residual related ash ponds will mitigate the potential for the future construction of costly ash landfill handling and disposal systems to receive the existing CCR.
- Scherer has installed dry fly ash and bottom ash handling systems that will ensure compliance with the portion of the ELG Rule that addresses the handling of fly ash and bottom ash transport water as transport water is no longer required. Additional wastewater treatment is expected to be required for the Scherer FGD (scrubber) in the future. Gulf Power does not anticipate the need to install additional controls for ELG compliance at Crist due to plans to convert the units to gas prior to the compliance date. Gulf Power has not projected ELG compliance costs for its ownership portion of Daniel because the Daniel bottom ash conversion projects needed for ELG compliance are being installed in 2020 for compliance with the CCR rule.

Many of FPL and Gulf Power's approved costs for environmental compliance investments can be found in the filings made in the FPSC's annual Environmental Cost Recovery Clause docket.

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

RESPONSE:
Please see Attachment No. 1 to this response.

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

RESPONSE:
The medium fossil fuel price forecast methodology for both FPL and Gulf Power utilizes projections from The PIRA Energy Group (now known as S&P Global), rates of escalation from the U.S. Energy Information Administration (EIA), NYMEX Natural Gas Futures contract prices (natural gas forward commodity price curve), Over-the-Counter forward market prices (fuel oil forward commodity price curves) and coal projections from JD Energy, Inc.

S&P Global, a world-recognized consulting firm with expertise in all aspects of the fuel oil and natural gas industry, supplies FPL with an extensive database to support its short and long-term projections of future fuel oil and natural gas prices. FPL utilizes forward commodity price curves for fuel oil and natural gas to project the short-term forecast (current year, current year plus 1 and current year plus 2), creates a blend of forward curves and S&P Global curves for the medium term (current year plus 3 and current year plus 4), and finally applies escalation rates provided by the EIA to the long-term fuel oil and natural gas projections provided by S&P Global.

JD Energy, a consulting firm retained by many utilities and coal suppliers, has expertise in all aspects of the coal and petroleum coke industry. The firm supplies FPL with an extensive database to support its short and long-term projections of future coal prices. FPL's forecasts reflect these authoritative and independent sources. Consequently, FPL believes the Company's projections are reasonable, and comparisons to other forecasts are not necessary.

QUESTION:
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)

RESPONSE:

a. The Indiantown coal unit burns bituminous coal supplied by mines in the Central Appalachia (CAPP) producing region of the U.S. There are several industry issues that challenge and will continue to challenge CAPP coal including, but not limited to, supplier consolidation, diminished supply as metallurgical coal production takes precedence over steam coal production, and an aging workforce. These issues will likely have a minimal impact on FPL operations. Scherer and Daniel generation units burn sub-bituminous coal supplied by surface mines in the Powder River Basin (PRB) producing region of the U.S. There will likely be upward pressure on PRB coal prices attributable to declining geologic conditions that are projected to result in higher mining costs. Higher mining costs may affect the ultimate supply cost to FPL and Gulf.

b. The EIA Annual Energy Outlook 2020 (AEO 2020) states that natural gas production is expected to grow 1.9% per year from 2020 to 2025, which is considerably lower than the 5.1% per year average growth rate from 2015 to 2020. Natural gas production from shale gas and tight oil plays continues to grow, both as a share of total U.S. natural gas production and in absolute volume.

   U.S. natural gas consumption in the AEO 2020 slows after 2020 and remains relatively flat through 2030 because of slower industrial sector growth. Consumption also declines in the electric power sector during this period. Natural gas used for U.S. electric power generation peaks in 2021 as relatively low natural gas prices, new natural gas-fired combined-cycle capacity, and coal-fired capacity retirements drive increases in natural gas-fired generation in the short term. However, strong growth in renewables and efficiency improvements in the remaining coal-fired fleet lead to declining amounts of natural gas consumed in the electric power sector through 2030.

Natural gas consumption in the residential and commercial sectors remains largely flat because of efficiency gains and population shifts to warmer regions that counterbalance population growth. Although natural gas consumption rises in the transportation sector--particularly for freight trucks, rail, and marine shipping--it remains a small share of both transportation fuel demand and total natural gas consumption. Growing demand in domestic and export markets leads to increasing natural gas spot prices over the projection period at Henry Hub despite continued technological advances that support increased production.

c. Nuclear Fuel Cost Forecast

This subpart reviews: the various steps needed to fabricate nuclear fuel for delivery to nuclear power plants, the method used to forecast the price for each step, and other comments regarding FPL's nuclear fuel cost forecast.

a) Steps Required for Nuclear Fuel to be delivered to FPL's Plants

Four separate steps are required before nuclear fuel can be used in a commercial nuclear power reactor. These steps are summarized below.

(1) Mining: Uranium is produced in many countries such as Canada, Australia, Kazakhstan, and the United States. During the first step, uranium is mined from the ground using techniques such as open pit mining, underground mining, in-situ leaching operations, or production as a by-product from other mining operations, such as gold, copper, or phosphate rocks. The product from this first step is the raw uranium delivered as an oxide, U3O8 (sometimes referred to as yellowcake).

(2) Conversion: During the second step, the U3O8 is chemically converted into UF6 which, when heated, changes into a gaseous state. This second step further removes any chemical impurities and serves as preparation for the third step, which requires uranium to be in a gaseous state.

(3) Enrichment: Natural uranium contains 0.711% of uranium at an atomic mass of 235 (U-235) and 99.289% of uranium at an atomic mass of 238 (U-238). FPL's nuclear reactors use uranium with a higher percentage of up to almost five percent (5%) of U-235 atoms. Because natural uranium does not contain a sufficient amount of U-235, the third step increases the percentage amount of U-235 from 0.711% to a level specified when designing the reactor core (typically in a range from approximately 2.0% to as high as 4.95%). The output of this enrichment process is enriched uranium in the form of UF6.

(4) Fabrication: During the last step, fuel fabrication, the enriched UF6 is changed to a UO2 powder, pressed into pellets, and fed into tubes, which are sealed and bundled together into fuel assemblies. These fuel assemblies are then delivered to the plant site for insertion in a reactor.

Like other utilities, FPL has purchased raw uranium and the other components of the nuclear fuel cycle separately from numerous suppliers from different countries.

b) Price Forecasts for Each Step

(1) Mining: The impact of the earthquake and tsunami that struck the Fukushima nuclear complex in Japan in March 2011 is still being felt in the uranium market as the majority of the Japanese nuclear reactors are still not operating. As a result, current demand has remained declined and several of the production facilities have either closed or announced delays. Factors of importance are:

- Some of the uranium inventory from the U.S. Department of Energy (DOE) is finding its way into the market periodically to fund cleanup of certain Department of Energy facilities.
- Although only two new nuclear units are scheduled to start production in the U.S. during the next 5 to 10 years, other countries, more specifically China, have announced an increase in construction of new units which may cause uranium prices to trend up in the near future.

Over a 10-year horizon, FPL expects the market to be more consistent with market fundamentals. The supply picture is more stable, with laws enacted to resolve the import of Russian-enriched uranium, by allowing some imports of Russian-enriched uranium to meet about 20% of needs for currently operating units after 2020 (an extension of these restrictions is currently under review). New and current uranium production facilities are decreasing capacity due to continued low prices and demands. Actual demand tends to grow over time because of the long lead time to build nuclear units. However, FPL cannot discount the possibility of future periodic sharp increases in prices, but believes such occurrences will likely be temporary in nature.

(2) Conversion: The conversion market is also in a state of flux due to the Fukushima events. Planned production after 2020 is currently forecasted to be insufficient to meet a higher demand scenario, but it is projected to be sufficient to meet most reference case scenarios. As with additional raw uranium production, supply will expand beyond the current level if more firm commitments are made. FPL expects long-term price stability for conversion services to support world demand. In addition, Converdyn, the only domestic conversion facility which was temporarily closed in 2017 due to low conversion

demand, has hinted about reopening as conversion prices have seen an up surge in the last couple of years. This will result in further stabilization of conversion prices.

(3) Enrichment: Since the Fukushima events in March 2011, the near-term price of enrichment services has declined. However, plans for construction of several new facilities that were expected to come on-line after 2011 have been delayed. Also, some of the existing high operating cost diffusion plants have shut down. As with supply for the other steps of the nuclear fuel cycle, expansion of future capacity is feasible within the lead time for constructing new nuclear units and any other projected increase in demand. Meanwhile, world supply and demand will continue to be balanced such that FPL expects adequate supply of enrichment services. The current supply/demand profile will likely result in the price of enrichment services remaining stable for the next few years, then starting to increase.

(4) Fabrication: Because the nuclear fuel fabrication process is highly regulated by the Nuclear Regulatory Commission (NRC), not all production facilities can qualify as suppliers to nuclear reactors in the U.S. Although world supply and demand is expected to show significant excess capacity for the foreseeable future, the gap is not as wide for U.S. supply and demand. The supply for the U.S. market is expected to be sufficient to meet U.S. demand for the foreseeable future.

c) Other Comments Regarding FPL's Nuclear Fuel Cost Forecast

FPL's nuclear fuel price forecasts are the result of FPL's analysis based on inputs from various nuclear fuel market expert reports and studies. There is adequate projected supply, including planned and prospective mine expansions, to meet FPL demands, including operation of the Turkey Point Units through the recently approved second life extension through the early 2050's. The calculations for the nuclear fuel cost forecasts used in FPL's 2020 and early 2021 resource planning work were performed consistent with the method then used for FPL's Fuel Clause filings, including the assumption of refueling outages every 18 months and plant operation at current (*i.e.*, power uprated) levels. The costs for each step to fabricate the nuclear fuel were added to calculate the total costs of the fresh fuel to be loaded at each refueling (acquisition costs). The acquisition cost for each group of fresh fuel assemblies were then amortized over the energy produced by each group of fuel assemblies. DOE notified FPL that, effective May 2014, all high-level waste payments would be suspended until further notice. Therefore, FPL is no longer including in its nuclear fuel cost forecast a 1 mill per kilowatt hour net to reflect payment to DOE for spent fuel disposal.

d. According to AEO 2020, U.S. crude oil production reaches 14.0 million barrels per day (b/d) by 2022 and remains near this level as tight oil development moves into less productive areas and well productivity declines. Onshore tight oil development in the Lower 48 states continues to be the main driver of total U.S. crude oil production, accounting for about 70% of cumulative domestic production.

Although production continues to grow through 2025, consumption of petroleum and other liquids remains lower than its 2004 peak level. The EIA projects the percentage of biofuels (ethanol, biodiesel, renewable diesel, and biobutanol) blended into U.S. gasoline, diesel, and jet fuel in the AEO 2020 Reference case will increase from 7.3% in 2019 to peak at 9.0% in 2040. The share of U.S. refinery throughput that is exported increases as domestic consumption of refined products decreases, leaving more petroleum product available to export. Strong production growth and decreasing domestic demand drive the U.S. to export higher volumes of crude oil and liquid fuels than it imports, resulting in growing levels of net exports.

e. N/A

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

RESPONSE:
FPL continues to evaluate strategies that will increase the reliability and supply diversity of its natural gas transportation portfolio to ensure adequate gas availability for future generation growth. In May of this year, the contract quantity on the Sabal Trail Transmission, LLC and Florida Southeast Connection, LLC pipelines will increase to 600,000 MMBtu/day. FPL also has the option to secure additional quantities in the future if it is determined they are the most competitive alternative. The current gas transportation portfolio provides FPL access to a diverse range of natural gas supply alternatives, which helps mitigate FPL's exposure to supply disruptions. FPL has secured natural gas transportation on a number of upstream pipelines with access to onshore natural gas supplies, which has significantly reduced dependence on Gulf of Mexico supplies, thereby decreasing the exposure to tropical weather events. In addition, FPL has contracted for natural gas storage to provide access to natural gas in the event of a loss of supply.

Gulf currently operates under the provisions of the Southern Company System Intercompany Interchange Contract ("IIC") as part of an integrated electric utility system with several other operating companies (commonly referred to as the "Pool"). As part of its integrated operations in the Pool, Gulf is required to meet certain requirements for fuels, including transportation and storage, under the Pool's Fossil Fuel Policy. Gulf's current portfolio of natural gas transportation meets the requirements of the Fossil Fuel Policy and helps ensure the deliverability of gas supply to Gulf's plants while also providing access to a diverse supply of natural gas. Gulf's current portfolio includes firm gas transportation on the Gulf South Pipeline Company, LP ("Gulf South"), Florida Gas Transmission Company, LLC ("FGT"), and Transcontinental Gas Pipe Line Company, LLC ("Transco") pipelines. In addition, as required by the Fossil Fuel Policy, Gulf has contracted for natural gas storage to provide access to natural gas in the event of a loss of supply. In preparation for the integration of Gulf and FPL into a single electric operating system on January 1, 2022, and Gulf's subsequent exit from the Pool, Gulf and FPL are currently evaluating strategies to help enhance the reliability and supply diversity of the combined natural gas transportation and storage portfolio while determining if opportunities exist to modify the portfolio to the benefit of all customers.

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

RESPONSE:
Pipelines are continuing to add capacity to deliver gas from the prolific Marcellus and Utica shale regions of Pennsylvania and Ohio to the Southeast. There are also several new projects that will bring gas from the Waha Hub in West Texas to the Texas Gulf Coast. In addition, several projects have been announced to bring gas to the Southeast from the Scoop/Stack and Haynesville production areas. FPL and Gulf continue to explore opportunities to access these growing supply sources, but currently have no definitive plans regarding these or other new pipelines. On the plant specific side, Gulf is currently in the process of converting Plant Crist Units 6 and 7 to burn natural gas which will be delivered via a new plant lateral (currently under construction) that will connect Plant Crist to the Florida Gas Transmission mainline.

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

RESPONSE:
The U.S. became a net natural gas exporter on an annual basis in 2017 and continued to export more natural gas than it imported in 2018 and in 2019. In the AEO 2020 Reference case, liquefied natural gas (LNG) exports to more distant destinations will increasingly dominate the U.S. natural gas trade, and the U.S. is projected to remain a net natural gas exporter. The U.S. continues to export more natural gas than it imports because near-term growth in liquefied natural gas (LNG) export capacity delivers domestic production to global markets. In the AEO 2020 Reference case, pipeline exports to Mexico and LNG exports to world markets increase moderately until 2025, after which pipeline export growth to Mexico slows. LNG exports are projected to continue to rise through 2030.

Three more LNG-export facilities became operational in the Lower 48 states in 2019, bringing the total number to six. Two new LNG projects reached final investment decisions and started construction in 2019. All LNG-export facilities and expansions currently under construction are expected to be completed by 2025. U.S. LNG-export capacity will continue serving growing global LNG demand, particularly in emerging Asian markets, as long as U.S. natural gas prices remain competitive.

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

RESPONSE:
FPL has 4.0 billion cubic feet (Bcf) of firm natural gas storage capacity under contract in the Bay Gas storage facility located in Alabama. The Bay Gas storage facility is interconnected to the Florida Gas Transmission ("FGT") pipeline, the Transcontinental Pipeline ("Transco") 4A Lateral, and the Gulf South Pipeline Company, LP ("Gulf South") facilities. Effective April 1, 2019, FPL entered into a three-year natural gas storage contract with Southern Pines Storage, owned and operated by SG Resources Mississippi, LLC ("Southern Pines"), for 1 Bcf of firm storage. Southern Pines is interconnected to FGT, Transco, and Southeast Supply Header Pipeline. FPL has predominately utilized natural gas storage to help mitigate gas supply interruptions caused by severe weather and/or infrastructure problems. Over the past several years, FPL has acquired upstream transportation capacity on several pipelines to help mitigate the risk of offshore supply problems caused by severe weather in the Gulf of Mexico. While this transportation capacity has greatly reduced FPL's offshore exposure, a portion of FPL's supply portfolio remains tied to offshore natural gas sources. Therefore, natural gas storage remains an important tool to help mitigate the risk of supply disruptions. For these reasons, FPL typically maintains higher levels of natural gas inventory during normal operations from June through November (hurricane season). From December through March, FPL typically maintains lower levels of natural gas inventory when compared to peak months. As FPL's reliance on natural gas has increased, its ability to manage the daily "swings" that can occur on its system due to weather and unit availability changes has become more challenging, particularly with respect to oversupply situations. Natural gas storage is a valuable tool to help manage the daily balancing of supply and demand. From a balancing perspective, injection and withdrawal rights associated with storage have become an increasingly important part of the evaluation of overall storage requirements. FPL continues to evaluate its future natural gas storage needs in light of the Company's increasing dependency on natural gas.

In accordance with the Southern Company System Pool's Fossil Fuel Policy, Gulf is required to maintain firm natural gas storage for its gas-fired power plants. Gulf is currently under contract for 1.1 Bcf of storage capacity in the Bay Gas storage facility, 0.85 Bcf in the Leaf River storage facility, and 0.50 Bcf in the Petal Gas Storage facility. In total, Gulf currently has 2.45 Bcf of firm natural gas storage capacity that helps mitigate the risk of supply loss and balance daily supply and demand requirements as forecasts change.

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

RESPONSE:
With respect to rail transportation issues during the period of 2020 through 2029, short term challenges of relatively low consequence, such as embargos for annual track maintenance or crew shortages, will likely persist. The railroads appear to have more than adequate locomotive power. FPL and Gulf Power own or have under long-term lease a sufficient number of coal cars to haul the projected coal requirements.

When FPL acquired Indiantown in 2017, both long-term rail transportation and rail car lease agreements were assumed as part of the transaction. Since Indiantown is served by a single railroad, competition among rail transportation modes has been effectively eliminated. As discussed in FPL and Gulf Power's 2020 Ten-Year Site Plan, the Company intends to terminate the power purchase agreement with Indiantown Cogen L.P. by the end of the 4th Quarter 2020, resulting in the retirement of the associated coal-fueled generating unit.

Scherer Nos. 3 and 4 are served by a single railroad. However, the rail movement of the coal from the Powder River Basin is a two-line haul that enables competition from the mine origin to an interchange point. The Plant Scherer co-owners, including FPL and Gulf Power, utilized that circumstance to seek least cost transportation through bidding and negotiation that resulted in the current long term rail contracts.

Plant Daniel is served by the Mississippi Export Railroad (MSE), a short line railroad with track from Pascagoula, MS to Evanston, MS. Coal supply is originated by either Union Pacific (Colorado origins) or BNSF (Wyoming origins) railroads. Trains are interchanged to the Canadian National Railway in Memphis, TN and interchanged once again to the MSE in Evanston. MSE provides transportation from Evanston to Plant Daniel.

Plant Crist coal units are being converted to burn natural gas. The conversion effort is already underway and is scheduled to be completed before the end of 2020. The plant received its last contracted rail shipment of coal to the Alabama State docks in February 2020. Barge transportation will be utilized to deliver that coal to the plant. The current contract for barge transportation was determined by a competitive bid process to ensure the lowest cost provider. There are no expected changes to the transportation or terminal facilities that would impact the transportation plans.

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

RESPONSE:
A variety of changes to coal handling, blending, unloading, and storage are currently projected at the coal generating units during the planning period 2020-2029. As discussed in the 2020 Ten-Year Site Plan, there will be notable PPA terminations, unit conversions and unit retirements which will impact the coal fleet. FPL intends to terminate the power purchase agreement with Indiantown Cogen L.P. by the end of the 4th Quarter 2020 and retire the associated coal-fueled generating unit. Gulf Power plans to convert Plant Crist Units 6 and 7 from coal-fueled to natural-gas fueled before the end of 2020. FPL plans to retire its ownership portion of the coal-fueled Scherer Unit 4 by January 2022. Gulf Power plans to retire its ownership portion of two coal-fueled steam units, Plant Daniel Units 1 and 2, by the beginning of 2024.

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

RESPONSE:
All FPL nuclear units have constructed dry cask storage facilities at their sites, which will allow for the safe, long-term on site storage of spent nuclear fuel (SNF) until a final repository is built.

On March 31, 2009, NextEra Energy Inc. ("NextEra") reached a settlement with the U.S. Department of Energy ("DOE") that reimbursed certain costs incurred by NextEra, for on-site storage of SNF due to DOE's failures to dispose of SNF. The settlement allowed NextEra to recover past SNF management costs incurred up to December 31, 2007. The settlement also permits an annual filing to recover spent fuel storage costs incurred by NextEra, payable by the Government on an annual basis.

On March 3, 2010, the DOE filed a motion with the Nuclear Regulatory Commission to withdraw the license application for a high-level nuclear waste repository at Yucca Mountain with prejudice. In light of the decision not to proceed with the Yucca Mountain nuclear waste repository, the President of the United States directed the Secretary of Energy to establish a Blue Ribbon Commission ("BRC") on America's Nuclear Future to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and to provide recommendations for developing a safe, long-term solution to managing SNF and nuclear waste.

In 2012, the BRC issued its report and recommendations which includes a consent-based approach to site future nuclear waste management facilities; creation of a new organization, independent of the DOE, dedicated solely to assuring the safe storage and ultimate disposal of spent nuclear fuel and high-level radioactive waste; providing access to the U.S. government's nuclear waste fund for the purpose of nuclear waste storage and disposal; and initiating prompt efforts to develop geologic disposal facilities, consolidated interim storage facilities and transportation to those facilities.

In January 2013, the DOE issued a strategy document for implementing the BRC recommendations, outlining among other things, long-term plans for a new management organization to handle spent fuel storage and disposal activities, development of new interim storage facilities and several possible funding reforms, including accessing the nuclear waste fund for funding these activities. A DOE team began crafting strategies for reaching out to communities that might accept and store nuclear waste.

In February 2018, the President's administration requested $120MM to restart licensing activities for the Yucca Mountain nuclear waste repository and initiate a robust interim storage program. However, the approved budget allocated no money to the project.

In May 2018, the House passed, by a 340-72 vote, the Nuclear Waste Policy Amendments Act of 2018, a bill that addresses a major condition for licensing the Yucca Mountain repository by withdrawing the repository site from use under public land laws and placing it solely under DOE control. The bill also authorizes the DOE to store spent fuel at interim NRC-licensed storage facilities, which would be owned by a non-federal entity. It also increases Yucca Mountain's capacity limit from 70,000 to 110,000 metric tons. The Senate received the bill on May 14, and it was read twice and referred to the Committee on Environment and Public Works, but no action has been taken since.

The House also passed another bill, Energy and Water Development Appropriations, 2019, which sought to provide FY2019 funding for nuclear energy programs and would give the DOE $100 million more than the $120 million requested for Yucca Mountain, but the Senate approved no Yucca Mountain funding. Instead, the Senate passed a bill that included authorization for a pilot program in FY2019 to develop an interim nuclear waste storage facility at a voluntary site. However, the FY2019 appropriations measure, which was enacted in September 2018, included neither the House-passed funding for Yucca Mountain nor the Senate interim storage authorization.

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

RESPONSE:
The uranium price increased during the second half of 2010 due primarily to the news of a significant increase in the future uranium demand to feed an increase in the number of new reactors that the Chinese planned to build. The earthquake and tsunami that struck Japan in March 2011 reversed that trend when all of the Japanese reactors were shut down and several other countries initiated abandonment of their nuclear programs. The market has drifted down since then and returned during the summer of 2013 to the levels that existed prior to the late 2010 uranium price increase. That downward drift was aided by the decision by the Department of Energy to sell some of its excess uranium inventories to fund the decontamination and decommissioning activities of old uranium enrichment plants. The market drifted down again in 2016 reaching a historic 12-year low in November. In early 2018, the market experienced a slight increase due to announcements of production cuts by two major mining companies, but the supply continues to exceed current demand. In 2019, the market again saw a slight decrease due to the continued over supply. In 2020, there has been a gradual increase in Uranium pricing driven by temporary mine closures and reduced output to proactively prevent COVID-19 transmission. This reduced production is expected to be short term, and expectation is that prices will return to near pre-COVID-19 levels after the pandemic is over. FPL expects uranium prices to remain stable in the next few years, with price behavior to be more consistent with market fundamentals.

The events in Japan have also had a significant impact on the enrichment services market. To date, that market has declined significantly and has stabilized. The timing of the return of the nuclear reactors in Japan and the quantity will play an important role in the future enrichment price. Still in 2020 and into the foreseeable future, the price is expected to remain at these lower levels.

As for the other steps of the fabrication of nuclear fuel (conversion and fabrication services), prices are expected to remain rather stable, and additional production would be added as needed to meet new reactor requirements.