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II. Forecast of Electric Power Demand

II.A. Overview of the Load Forecasting Process

On January 1, 2019, Gulf Power became a subsidiary of NextEra Energy, the parent company of FPL. The load forecasting teams from FPL and Gulf were consolidated into one load forecasting team, which developed the forecasts of customers, sales, net energy for load (NEL), and peak demands presented in this Site Plan. Modifications were made to the standalone methodologies that were formerly applied to FPL and/or Gulf. The result is that consistent forecasting methodologies are now being applied to both the FPL and Gulf areas. These modifications are detailed later in this chapter. However, at the time this 2020 Site Plan is filed, the forecasting methodologies used to provide the load forecast information presented in this document are evolving as work to integrate the two companies is ongoing. The load forecasting team will evaluate and implement appropriate enhancements to the forecasting methodologies for upcoming forecasts.

As previously discussed, FPL and Gulf plan to integrate the two systems into a single electric system, effective 1/1/2022. In this document, the load forecasts for FPL and Gulf will be presented separately for the years 2020 and 2021. For 2022 through 2029, the load forecast for the single integrated utility will be presented. That electrically integrated system will be referred to in this document as FPL. This forecast will reflect the growth of the new integrated system, including reduced peak demand from load diversity.

FPL and Gulf typically develop long-term forecasts of customers, energy sales, and peak loads on an annual basis for each of their systems. This was done again in order to develop load forecasts for the single integrated system. Gulf's new long-term forecasts were developed in the 3rd Quarter of 2019 and FPL's new long-term forecasts were developed in the 4th Quarter of 2019[7]. The forecasts for FPL and Gulf then were combined to arrive at the forecasts for the single integrated system for the years 2022 and beyond. These new load forecasts are utilized throughout this 2020 Site Plan and are key inputs to the models used to develop the integrated resource plan presented in this document.

The following pages describe how the forecasts of customers, energy sales, and peak loads were developed first separately for FPL and Gulf, and then combined into a single set of forecasts for the integrated system. Consistent with past forecasts, the drivers for both the FPL

[7] At the time the forecasts presented in this TYSP were developed, Gulf was obligated as member of the Southern Company pool to provide updated NEL and peak demand forecasts to Southern Company Services for their planning process. The difference in the timing of the planning processes resulted in Gulf's forecast being completed prior to FPL's forecast.

and Gulf forecasts include population and household growth, economic conditions, electricity prices, weather, and energy-efficiency codes and standards. Additionally, these forecasts are 50% probability (P50) forecasts. This means there is a 50% probability that actual load will be on either side of forecasted load.

The projections for population growth, household growth, and other economic variables are obtained from IHS Markit, a leading economic forecasting firm. Using statistical models, these inputs are quantified in terms of their impact on the future demand for electricity.

Weather is a key factor that affects energy sales and peak demand. The weather variables for use in FPL's and Gulf's forecasting models are as follows:

1. The residential and commercial energy models incorporate heating degree hours and/or cooling degree hours. The threshold temperatures differ based on how each customer group responds to temperatures.
2. The Summer peak demand models incorporate maximum temperatures on the peak Summer day while the Winter peak demand models incorporate minimum temperatures on the peak Winter day. Additional details are provided later in this chapter.

FPL's weather variables are based on a composite hourly temperature using temperatures from weather stations across FPL's service area: Miami, Ft. Myers, Daytona Beach, and West Palm Beach. The temperatures for each weather station are weighted based on the energy sales associated with that region. The resulting composite temperatures are then used to derive FPL's cooling degree hours and heating degree hours used in the energy models and the peak day temperatures used in the Summer and Winter peak demand models.

Gulf's weather variables are based on the hourly temperatures from the Pensacola weather station. The Pensacola hourly temperatures are then used to derive Gulf's cooling degree hours and heating degree hours used in the energy models and the peak day temperatures used in the Summer and Winter peak demand models. The eight counties in Gulf's service area typically experience similar weather patterns and previous experience has shown that the use of multiple weather stations does not result in significant differences in the reported weather. The Pensacola weather station is used due to the availability of consistent historical data.

II.B. Customer Forecasts

FPL's customer forecasts are developed by class as the factors driving customer growth vary by class. Residential customer growth is driven by population, commercial customer growth is

driven by employment and recent trends, and industrial customer growth is driven by housing starts and recent trends. Projections of population, employment, and housing starts are from IHS Markit. Total customer growth is projected to grow at an average annual rate of 1.0% during the years 2020 and 2021. The primary driver of customer growth is population.

Gulf's customer forecasts are also developed by class. Residential customer growth for 2020 and 2021 are based on projections prepared by Gulf's field marketing managers and growth for years 2022 and beyond are based on household growth projection from IHS Markit. Commercial customer growth for 2020 is based on projections prepared by Gulf's field marketing manager and commercial customer growth for years 2021 and beyond is based on residential customer growth. Industrial customer growth is driven by recent trends. Total customer growth is projected to grow at an average annual rate of 1.63% during the years 2020 and 2021. The primary driver of customer growth is population growth.

The customer forecasts for the integrated system for 2022-on is the sum of the class-level customer forecasts for FPL and Gulf, which represent 91.5% and 8.5% of the combined 2022 customers, respectively. Total customer growth is projected to grow at an average annual rate of 0.9% during the forecast period. The primary driver of customer growth is projected increase in population.

II.C. Energy Sales Forecasts

Energy sales forecasts for both FPL and Gulf were developed for the major revenue classes, wholesale energy sales, and losses. Energy adjustments, such as electric vehicles and private solar, were calculated and applied to the class-level energy sales forecasts. These forecasts were then aggregated up to arrive at the NEL forecast for each company (a bottom-up approach). Econometric models were developed using the statistical software package MetrixND.

The FPL energy sales forecast presented in this TYSP for the years 2020 and 2021 was developed using a bottom-up approach whereas prior FPL forecasts were developed using a top-down approach in which the forecast began with the NEL forecast and class-level forecasts were then adjusted to match the NEL forecast. FPL's adoption of the same bottom-up approach that has been used by Gulf has several potential benefits. This approach ensures a consistent energy sales forecasting methodology is being used for both utility systems. In addition, the bottom-up approach has the potential for enhancing both the ability to perform forecast variance analyses as actual load data becomes available and for enhancing the ability to capture different growth rates between revenue classes.

1. **Residential Sales**

FPL's residential energy sales forecast was developed using an econometric model. Residential energy sales, expressed as monthly use per customer by billing day, are a function of cooling degree hours, heating degree hours, real per capita income, the four month moving average of real electricity price increases over time, energy savings from changes to energy efficiency codes and standards, monthly binary terms, and an autoregressive term. The forecasted energy use per customer per billing day was then multiplied by the projected number of residential customers and projected billing days by month to arrive at the residential billed energy sales. The billed energy sales were then adjusted for unbilled energy to arrive at the calendar month delivered energy sales forecast.

Gulf's residential energy sales forecast was also developed using an econometric model. Monthly use per customer per billing day was estimated based on historical data, normal weather, price of electricity, energy savings from changes to energy efficiency codes and standards, monthly binary terms, and an autoregressive term. The model output was then multiplied by the projected number of residential customers and projected billing days by month to expand to the total residential class.

The methodology described above for Gulf was used for the entire forecast horizon whereas prior forecasts applied this methodology only for the short-term. Growth rates from the LoadMAP-R electric utility end-use model were then used to extend the short-term residential sales forecast into the long-term forecast horizon. Gulf's adoption of the long-term model results for the entire forecast horizon ensures both FPL and Gulf are employing enhanced energy sales forecasting methodologies.

Both FPL's and Gulf's residential energy sales forecasts were adjusted to reflect the anticipated impact of continued adoption of electric vehicles. FPL's residential energy sales forecast was also adjusted to reflect the impact of private solar.

The residential energy sales forecast for the integrated system for the year 2022-on is the sum of the residential sales forecasts for FPL and Gulf, which represent, respectively, 91.5% and 8.5% of the combined 2022 residential sales. Residential energy sales are projected to grow at an average annual rate of 0.9% during the forecast period.

2. **Commercial Sales**

Econometric models were also used to develop a commercial sales forecast for FPL. The commercial class is forecast using one model for lighting accounts and three separate

models based on customer size: small accounts (less than 20 kW of demand), medium accounts (21 kW to 499 kW of demand), and large accounts (demand of 500 kW or higher). Except for the commercial lighting accounts model, the commercial sales models utilize the following variables: cooling degree hours, employment, and the four month moving average of real electricity price increases. Monthly binary terms were utilized in the large and medium models; and an autoregressive term was utilized in the medium and small models. The model outputs were then multiplied by the projected number of commercial customers associated with each respective model and the projected billing days by month to arrive at the billed energy sales. The billed energy sales were then adjusted for unbilled energy to arrive at the calendar month delivered energy sales forecast. The commercial lighting accounts model is based on historical sale trends and input from FPL's lighting group regarding the impact of LEDs. These forecasts are then added together to arrive at the total commercial sales forecast.

Econometric models were also used to develop a commercial non-lighting sales forecast for Gulf. The commercial non-lighting sales is forecast using two separate models which are based on customer size: small accounts (less than 25 kW of demand) and large accounts (all other commercial rate schedules excluding lighting rates). The models utilize the following variables: cooling degree hours, heating degree hours, twelve month moving average of real electricity prices, energy savings from changes to energy efficiency codes and standards, monthly binary terms, and an autoregressive term. The model outputs were then multiplied by the projected number of commercial customers associated with each respective model and the projected billing days by month to arrive at the billed energy sales. The billed energy sales were then adjusted for unbilled energy to arrive at the calendar month delivered energy sales forecast. The commercial lighting sales were developed using historical growth rates and input from Gulf's lighting team to gain insight into future trends.

The methodology described above for Gulf's forecast was used for the entire forecast horizon while prior forecasts employed this methodology only for the short-term forecast. Growth rates from the LoadMAP-C electric utility end-use model are then used to extend the short-term commercial sales forecast into the long-term forecast horizon. Gulf's adoption of the long-term results for the entire forecast horizon ensures both FPL and Gulf are employing enhanced energy sales forecasting methodologies.

FPL's commercial energy sales forecast was adjusted to reflect the impact of private solar and the incremental load projected to be added for the forecast period from FPL's economic development riders.

The commercial energy sales forecast for the integrated system for the years 2022-on is the sum of the commercial sales forecasts for FPL and Gulf, which represent, respectively, 93.0% and 7.0% of the combined 2022 commercial sales. Commercial energy sales are projected to grow at an average annual rate of 0.4% during the forecast period.

3. Industrial Sales

Forecasts developed for FPL's industrial class sales consists of one model for lighting accounts and three separate models based on customer size: small accounts (less than 20 kW of demand), medium accounts (21 kW to 499 kW of demand), and large accounts (demands of 500 kW or higher). The small industrial sales model utilizes cooling degree hours, an autoregressive term, and a lagged variable. The medium, large, and lighting accounts forecasts utilize exponential smoothing models. The small, medium, large, and lighting accounts forecasts were then added together to arrive at the total industrial sales forecast.

Forecasts for Gulf's industrial class sales used a combination of surveys of major industrial customers and historical average use per customer. Gulf's largest industrial customers were interviewed by Gulf's industrial account representatives to identify expected future load changes. The forecast of sales to the remaining smaller industrial customers was developed by rate code using historical average use per customer, which was multiplied by the projected number of customers to arrive at energy sales. The forecasts for the largest industrial customers and the remaining smaller industrial customers were added together to arrive at the total industrial sales forecast.

FPL's Industrial energy sales were adjusted for forecasted Commercial/Industrial Service Rider (CISR) sales for new or retained customer loads of 2 MW or greater and meet the criteria outlined in FPL's Rate Schedule: CISR-1.

The industrial energy sales forecast for the integrated system for the years 2022-on is the sum of the industrial sales forecasts for FPL and Gulf, which represent, respectively, 65.9% and 34.1% of the combined 2022 industrial sales. Industrial energy sales are projected to remain mostly flat during the forecast period, only growing at an average annual rate of 0.2%.

4. Railroad and Railways Sales and Street and Highway Sales

FPL's Railroad and Railway class consists solely of Miami-Dade County's Metrorail system. The projections for railroad and railways sales are based on a historical moving average.

FPL develops the forecast for Street and Highway sales by first developing a trended use-per-customer value, then multiplying this value by the number of forecasted customers.

Gulf's street and highway class consists of outdoor lighting accounts for governmental entities and municipal services benefit units (MSBU). An MSBU is a non-ad valorem assessment district established for funding improvements, such as street lighting, in a specific geographic area. The projections for street and highway sales are based on historical growth rates and inputs from Gulf's lighting team to gain insight into future trends.

5. Other Public Authority Sales

This class is applicable only to FPL and consists of a sports field rate schedule (which is closed to new customers) and one government account. The forecast for this class is based on its historical usage characteristics.

6. Total Sales to Ultimate Customer

The sales forecasts by revenue class for FPL and Gulf are each summed to produce their respective total sales forecasts.

7. Sales for Resale

Sales for resale (wholesale) customers are comprised of sales to municipalities and/or electric co-operatives. These customers differ from jurisdictional customers in that they are not the ultimate users of the electricity. Instead, they resell this electricity to their own customers.

The load forecast for FPL includes wholesale loads served under full and partial-requirements contracts that provide other utilities all, or a portion of, their load requirements at a level of service equivalent to FPL's own native load customers. There are currently nine customers in this class: Florida Keys Electric Cooperative, Lee County Electric Cooperative, New Smyrna Beach, Wauchula, Homestead, Quincy, Moore Haven, Florida Public Utilities Company, and Seminole Electric Cooperative.[8]

[8] FPL continues to evaluate the possibility of serving the electrical loads of other entities at the time this Site Plan was being prepared. Because these possibilities are still being evaluated, the load forecast presented in this Site Plan does not include these potential loads.

The load forecast for Gulf also includes a full-requirements wholesale contract that provide another utility all of their load requirement at a level of service equivalent to Gulf's own native load customers. There is currently one customer in this class: Florida Public Utilities Company.

Since May 2011, FPL has provided service to the Florida Keys Electric Cooperative under a long-term, full-requirements contract. The sales to Florida Keys Electric Cooperative are based on customer-supplied information and historical coincidence factors.

FPL sales to Lee County began in 2010. Lee County has a contract with FPL for the full-requirements of their load that is projected to continue through 2033, with an option to extend the contract through 2053. Forecasted NEL for Lee County is based on customer-supplied information and historical usage trends.

FPL sales to New Smyrna Beach began in February 2014. The contract is projected to continue through December 2021. Under a second contract, additional sales to New Smyrna Beach began in July 2017 and are also projected to continue through December 2021. Under a third contract, sales to New Smyrna again increased beginning in January 2019 and these are also projected to continue through December 2021

FPL's sales to Wauchula began in October 2011. The contract is projected to continue through December 2023.

FPL sales to Homestead began in August 2015. The contract is projected to continue through December 2026. Under a separate contract, additional sales to Homestead began in January 2020 and are also projected to continue through December 2026.

FPL sales to Quincy began in January 2016. The contract is projected to continue through December 2023.

FPL sales to Moore Haven began in July 2016. The contract is projected to continue through December 2025.

FPL sales to Florida Public Utilities Company began in January 2018. The contract is projected to continue through December 2026.

FPL sales to Seminole Electric Cooperative are based on delivery of 200 MW that began in June 2014 and is projected to continue through May 2021.

Gulf Power sales to Florida Public Utilities Company is projected to continue through December 2026.

II.D. Net Energy for Load (NEL)

The NEL forecast for both FPL and Gulf are the sums of the retail energy, wholesale energy, and losses. Through the use of the energy efficiency variable, the retail energy sales forecast includes the impacts from major energy efficiency codes and standards, including those associated with the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and savings resulting from the use of compact fluorescent bulbs (CFLs) and LEDs. The estimated impact from these codes and standards includes engineering estimates and any resulting behavioral changes. The impact of these savings began in 2005 and, from that year, their cumulative impact on NEL for the integrated system is projected to be a reduction of 6,028 GWh by 2029. This represents an approximately 4.2% reduction in what the forecasted NEL for 2029 would have been absent these codes and standards. From the end of 2019, the incremental reduction through 2029 is expected to be 2,482 GWh. The estimated impacts from codes and standards are based on the energy efficiency variables in the respective energy models. Previously, FPL's NEL forecast was based on a top-down approach using a single model for NEL which included an energy efficiency variable. The result of this approach assigned energy efficiency savings to all FPL customer classes.

FPL's current NEL forecast, however, is based on a bottoms-up approach using separate models for each class. The result of this approach found that the energy efficiency variables were not statistically significant[9] for the commercial customer model, and as such, the impact associated with energy efficiency on FPL's commercial sales cannot be quantified separately using the current models. While this energy efficiency impact cannot be separately quantified using the current models, this should not be interpreted as though energy efficiency is not impacting commercial customers nor that the NEL forecast is not accounting for this impact. What it means is that this impact for the commercial class is being captured in another variable within the model. However, as a result, it appears that there is a decline in the explicitly quantified energy efficiency impact on total NEL through 2029 compared to the results presented in the 2019 Site Plan. As previously mentioned, FPL routinely evaluates its

[9] The efficiency variable was highly correlated with the price term, and the resulting multicollinearity issue resulted in the variable exhibiting a high p-value. Variables with a high p-value are not statistically significant to the model.

methodologies and models for potential refinements and one area for possible refinement is in regard to separately quantifying the impact of energy efficiency codes and standards for commercial class customers.

FPL makes an adjustment for the impact of incremental private solar projected to be added during the forecast period. The impact of private solar on the NEL forecast for the integrated system is projected to be a reduction of approximately 1,311 GWh by 2029. FPL and Gulf also adjust for the additional load projected to be added due to the incremental adoption of new plug-in electric vehicles. This results in an increase on the integrated system of approximately 1,686 GWh by 2029. The forecast is also adjusted for the incremental load projected to be added to FPL's system from FPL's economic development riders forecast. This incremental load is projected to be approximately 252 GWh by 2029.

II.E. System Peak Forecasts

The rate of absolute growth in peak load for both FPL and Gulf has been a function of the size of the customer base, weather, projected economic conditions, and energy-efficiency codes and standards. The peak forecast models capture these behavioral relationships. In addition, the peak forecast for FPL also reflects changes in load expected from private solar, the expected number of plug-in electric vehicles, FPL's economic development riders, and wholesale requirements contracts. With respect to the peak forecast for Gulf, the projected impacts of private solar and electric vehicles are believed to be relatively small. However, the ability to better incorporate projected impacts of private solar and EVs in Gulf's area is another aspect of the current forecasting methodologies for which the load forecasting team will evaluate for additional refinements in upcoming forecasts.

The monthly peak load for the integrated system from 2022-on is the highest hourly demand from the forecasted system hourly load forecast, which was developed by summing the forecasted system hourly loads for FPL and Gulf. The integrated system peak load forecast reflects the growth in peak load for FPL and Gulf along with the peak demand savings associated with load diversity.

As separate systems, FPL and Gulf peak at different hours and this difference is due to load diversity. The load diversity is primarily due to their respective loads being located in different time zones and the benefit of load diversity is that the combined system peak demand is lower than the sum of the standalone FPL and Gulf peaks demands. By 2029, the load diversity results

in a projected reduction to the integrated system peaks of 103 MW in the Summer and 190 MW in the Winter. This represents savings for customers.

The savings from energy-efficiency codes and standards incorporated into the peak forecast include the impacts from the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and the use of CFLs and LEDs. The impact from these energy-efficiency standards began in 2005, and their cumulative reduction, from that year, on the integrated Summer peak is projected to reach approximately 5,732 MW by 2029. This reduction includes engineering estimates and any resulting behavioral changes.

The cumulative 2029 impact from these energy-efficiency codes and standards is projected to effectively reduce the integrated system's Summer peak for that year by approximately 19%. From the end of 2019, the projected incremental impact on the Summer peak from these energy-efficiency codes and standards is a reduction of approximately 1,848 MW through 2029.

The peak forecast for FPL was also adjusted for the additional load estimated from private solar, plug-in electric vehicles, and FPL's economic development riders. The impact from plug-in electric vehicles is projected to be an increase on the integrated system of approximately 582 MW in the Summer and 291 MW in the Winter by the end of 2029. The impact on the integrated system from FPL's economic development riders is projected to be an increase of approximately 29 MW in the Summer peak and 61 MW in the Winter peak. The incremental impact of private solar on the integrated system is an expected decrease of approximately 327 MW in the Summer and a negligible reduction in the Winter by the end of 2029.

The forecasting methodology for Summer, Winter, and monthly system peaks is discussed below.

The forecasted values for FPL's and Gulf's Summer and Winter peak loads for the years 2020 through 2021 are presented separately at the end of this chapter in Schedules 3.1 and 3.2, and in Chapter III in Schedules 7.1 and 7.2. For the years 2022 through 2029, only forecasted values for the integrated system are presented on these schedules.

1. System Summer Peak

The Summer peak forecast for FPL is developed using an econometric model based on the Summer peak contribution per customer. The variables included in the model are Florida real per capita income, cooling degree hours two days prior to the peak day, the maximum temperature on the day of the peak, a variable for energy efficiency codes and standards,

binary variables years 2005 and 2019, and autoregressive terms. The model output is multiplied by the total number of customers to arrive at the projected Summer peak demand. This product is then adjusted to account for the expected changes in loads resulting from private solar, plug-in electric vehicles, FPL's economic development riders, and wholesale requirements contracts to derive FPL's system Summer peak.

The Summer peak forecast for Gulf is developed using an econometric model based on the Summer peak contribution per customer. The variables included in the model are the maximum temperature on the day of the peak, a variable for energy efficiency codes and standards, employment-weighted real per capita income, and an autoregressive term. The model output is multiplied by the total number of customers to arrive at the projected Summer peak demand.

Summer peak forecasts presented in Gulf's prior Site Plans were developed using the Peak Demand Model (PDM) which spread the energy projections using historical load shapes to develop forecasted hourly load shapes and the monthly forecast peak demand was the single highest hour in each month. Adoption of the econometric modeling approach for Summer peak forecast ensures FPL and Gulf are employing enhanced peak demand forecasting methodologies.

The Summer peak demand forecast for the integrated system for 2022-on is the highest hourly demand during the Summer months from the integrated system hourly forecast, which was developed by summing the forecasted system hourly loads for FPL and Gulf. This approach ensures the Summer peak demand forecast for the integrated system reflects the growth in Summer peak load for FPL and Gulf along with the Summer peak demand savings associated with load diversity. The Summer peak demand for the integrated system is projected to occur in August.

2. System Winter Peak

The Winter peak forecast for FPL is developed using an econometric model based on the Winter peak contribution per customer. The variables included in the model are employment-weighted real per capita income, the minimum temperature on the peak day, a weather-related variable capturing cold buildup, a binary variable for year 2008, and a trend variable. The model output is multiplied by the total number of customers to arrive at the projected Winter peak demand. The projection is then adjusted for the expected changes in loads resulting from private solar, plug-in electric vehicles, FPL's economic development riders, and wholesale requirement contracts.

The Winter peak forecast for Gulf was developed using an econometric model based on the Winter peak contribution per customer. The variables included in the model are the minimum temperature on the peak day, a variable for energy efficiency codes and standards, and autoregressive terms. The model output is then multiplied by the total number of customers to arrive at the projected Winter peak demand.

The Winter peak forecasts presented in prior Gulf Site Plans were developed using the PDM model. Adoption of the econometric modeling approach for Winter peak forecast ensures FPL and Gulf are employing enhanced peak demand forecasting methodologies.

The Winter peak demand forecast for the integrated system is the highest hourly demand during the Winter months from the integrated system hourly forecast. This approach ensures the integrated Winter peak demand forecast reflects the growth in the Winter peak load for FPL and Gulf along with the Winter peak demand savings associated with load diversity. The Winter peak demand for the integrated system is projected to occur in January.

3. Monthly Peak Forecasts

The forecasting process for FPL's monthly peaks begins with two assumptions. First, the forecasted annual Summer peak is assumed to occur in the month of August, which historically has accounted for more annual Summer peaks than any other month. Second, the forecasted annual Winter peak is assumed to occur in the month of January, which historically has accounted for more annual Winter peaks than any other month. Then the remaining monthly peaks are forecasted based on the historical relationship between the monthly peaks and the annual Summer peak.

The forecasting process for Gulf's monthly peaks begins with two assumptions. First, the forecasted annual Summer peak is assumed to occur in the month of July, which historically has accounted for more annual Summer peaks than any other month. Second, the forecasted annual Winter peak is assumed to occur in the month of January, which historically has accounted for more annual Winter peaks than any other month. Then the remaining monthly peaks are forecasted based on the historical relationship between the monthly peaks and the annual Summer peak.

Monthly peak forecasts presented in prior Gulf Site Plans were developed using the PDM model. Gulf's adoption of FPL's monthly peak demand forecast process ensures FPL and Gulf are employing enhanced monthly peak demand forecasting methodologies.

The monthly peak demand forecast for the integrated system for 2022-on is the highest hourly demand by month from the integrated system hourly forecast. This approach ensures the integrated monthly peak demand forecast reflects the growth in monthly peaks for FPL and Gulf along with the monthly peak demand savings associated with load diversity.

II.F. Hourly Load Forecast

Forecasted values for system hourly load on the FPL system for the period 2020 through 2029 were developed using a system load forecasting program named MetrixLT. This model uses years of historical FPL hourly system load data to develop load shapes. The model generates a projection of hourly load values based on these load shapes and the forecast of FPL's monthly peaks and energy.

Forecasted values for system hourly load on the Gulf system for the period 2020 to 2029 were also developed using MetrixLT, which uses historical Gulf hourly system load data to develop load shapes. The model generates a projection of hourly load values based on these load shapes and the forecast of Gulf's monthly peaks and energies.

The forecasted values for system hourly load on the integrated system for 2022-on were the summation of the FPL and Gulf hourly load for the period. The Gulf system hourly load was adjusted from Central to Eastern time zone to be consistent with FPL's system hourly load.

II.G. Uncertainty

Uncertainty is inherent in the load forecasting process. This uncertainty can result from a number of factors, including unexpected changes in consumer behavior, structural shifts in the economy, and fluctuating weather conditions. Large weather fluctuations, in particular, can result in significant deviations between actual and forecasted peak demands. The load forecast is based on average expected or normal weather conditions. An extreme 90% probability (P90) cold weather event can add an additional 3,000 MW or more to the Winter peak, and an extreme P90 hot weather event can add an additional 750 MW to the Summer peak.

In order to address uncertainty in the forecast of aggregate peak demand and NEL, the assumptions underlying the forecasts are first evaluated. Then a series of steps are taken to evaluate the input variables, including comparing projections from different sources, identifying outliers in the series, and assessing the series' consistency with past forecasts. Additional factors that may affect the input variables are reviewed as needed.

Uncertainty is also addressed in the modeling process. Econometric models generally are used to forecast peak demands and energies. During the modeling process, relevant statistics such as (goodness of fit, F-statistic, P-values, mean absolute deviation (MAD), mean absolute percentage error (MAPE), etc.) are scrutinized to ensure the models adequately explain historical variation. Once a forecast is developed, it is compared with past forecasts. Deviations from past forecasts are examined in light of changes in input assumptions to ensure that the drivers underlying the forecast are thoroughly understood. Finally, forecasts of aggregate peak demand and NEL are compared with the actual values as they become available. An ongoing process of variance analyses is performed. To the extent the variance analyses identify large unexplained deviations between the forecast and actual values, revisions to the econometric model may be considered. Finally, the forecasting group regularly engages with forecasting professionals from other electric utilities to share best practices and changes to existing processes may be considered.

The inherent uncertainty in load forecasting is addressed in different ways in regard to the overall resource planning and operational planning work. With respect to resource planning work, the utilization of a 20% total reserve margin (TRM) criterion, a Loss-of-Load-Probability (LOLP) criterion of 0.1, and a 10% generation-only reserve margin (GRM) criterion are designed to maintain reliable electric service for customers in light of forecasting and other uncertainties. In addition, banded forecasts of the projected Summer peak and NEL may be produced based on an analyses of past forecasting variances. A banded forecast for the projected Summer and Winter peak days may also be developed based on historical weather variations. These bands are then used to develop similar bands for the monthly peaks. A P80 monthly peak forecast is typically provided to FPL's System Operations group for operational planning purposes.

II.H. DSM

FPL and Gulf assume that the effects of its DSM energy-efficiency programs through August 2019 are embedded in the actual usage data for forecasting purposes. In addition, the utilities account for the following projected DSM MW and MWh impacts as "line item reductions" to the forecasts as part of the IRP process: 1) the impacts of incremental energy efficiency that the utilities have implemented in the September 2019 through December 2019 time period (*i.e.*, after the 2019 Summer peak has occurred), 2) projected impacts from incremental energy efficiency that FPL plans to implement in 2020 through 2024 in response to the DSM Goals that were set for each utility by the FPSC in the 4th Quarter of 2019 for the 2020 – 2024 time period, 3) the inclusion of additional currently projected cost-effective DSM for the years 2025 through 2029, and 4) the cumulative and projected incremental impacts of FPL's load management

programs through 2029. After making these adjustments to the load forecasted load values, the resulting “firm” load forecast as shown in Chapter III in Schedules 7.1 and 7.2., is then used in the IRP work.

Schedule 2.1: FPL
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption Per Customer	GWh	Average No. of Customers	Average kWh Consumption Per Customer
2010	8,851,966	2.21	56,343	4,004,366	14,070	44,544	503,529	88,464
2011	8,979,403	2.23	54,642	4,026,760	13,570	45,052	508,005	88,685
2012	9,096,135	2.24	53,434	4,052,174	13,187	45,220	511,887	88,340
2013	9,219,688	2.25	53,930	4,097,172	13,163	45,341	516,500	87,786
2014	9,357,139	2.24	55,202	4,169,028	13,241	45,684	525,591	86,919
2015	9,517,833	2.25	58,846	4,227,425	13,920	47,369	532,731	88,916
2016	9,687,433	2.26	58,687	4,284,159	13,699	47,355	540,356	87,637
2017	9,824,821	2.26	58,188	4,338,224	13,413	47,151	547,908	86,056
2018	10,004,467	2.28	59,096	4,391,832	13,456	47,394	553,562	85,616
2019	10,119,121	2.26	60,325	4,479,356	13,467	48,078	565,622	85,000

Historical Values (2010 - 2019):

Col. (2) represents population only in the area served by FPL.

Col. (4) and Col. (7) represent actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (5) and Col. (8) represent the annual average of the twelve monthly values.

Schedule 2.1: Gulf
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption Per Customer	GWh	Average No. of Customers	Average kWh Consumption Per Customer
2010	873,320	2.32	5,651	375,847	15,036	3,997	53,349	74,912
2011	882,950	2.33	5,305	378,157	14,028	3,911	53,409	73,235
2012	898,710	2.37	5,054	379,897	13,303	3,859	53,706	71,846
2013	911,720	2.38	5,089	382,599	13,301	3,810	54,261	70,215
2014	923,520	2.39	5,362	386,765	13,865	3,838	54,749	70,104
2015	936,420	2.39	5,365	391,465	13,705	3,898	55,234	70,566
2016	949,240	2.39	5,358	396,408	13,515	3,869	55,876	69,236
2017	962,790	2.40	5,229	401,793	13,015	3,814	56,428	67,583
2018	977,810	2.40	5,519	406,949	13,563	3,829	56,892	67,298
2019	990,370	2.43	5,520	407,436	13,548	3,775	56,590	66,710

Historical Values (2010 - 2019):

Col. (2) includes the Pensacola, Crestview, and Panama City MSAs, which are generally representative of the area served by Gulf.

Col. (4) and Col. (7) represent actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (5) and Col. (8) represent the annual average of the twelve monthly values.

Schedule 2.1
Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption Per Customer	GWh	Average No. of Customers	Average kWh Consumption Per Customer
FPL								
2020	10,227,063	2.26	59,382	4,527,529	13,116	48,037	572,459	83,914
2021	10,335,192	2.26	59,814	4,568,149	13,094	48,469	579,245	83,677
Gulf								
2020	1,000,760	2.42	5,405	414,018	13,029	3,646	57,318	63,564
2021	1,010,360	2.40	5,433	421,341	12,852	3,629	57,932	62,563
Integrated FPL and Gulf								
2022	11,465,461	2.28	65,314	5,036,516	12,963	52,262	644,416	81,100
2023	11,586,120	2.28	65,784	5,084,160	12,932	52,440	650,778	80,581
2024	11,708,833	2.28	66,480	5,129,346	12,952	52,735	656,117	80,374
2025	11,832,535	2.29	66,969	5,173,248	12,937	52,937	660,837	80,107
2026	11,956,071	2.29	67,586	5,217,662	12,945	53,177	665,392	79,918
2027	12,080,045	2.30	68,285	5,261,200	12,971	53,433	669,923	79,760
2028	12,204,016	2.30	69,176	5,303,021	13,037	53,783	674,471	79,741
2029	12,328,021	2.31	69,845	5,344,810	13,060	53,871	679,110	79,326

Projected Values (2020 - 2029):

Col. (2) represents population in the areas served by FPL and Gulf separately for 2020 and 2021, and by the single integrated system for 2022 - 2029

Col. (4) and Col. (7) represent forecasted energy sales that do not include the impact of incremental conservation. These values are at the meter.

Col. (5) and Col. (8) represent the annual average of the twelve monthly values.

Schedule 2.2: FPL
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Industrial			Railroads &	Street & Highway	Sales to Public	Sales to Ultimate
Year	GWh	Average No. of Customers	Average kWh Consumption Per Customer	Railways GWh	Lighting GWh	Authorities GWh	Consumers GWh
2010	3,130	8,910	351,318	81	431	28	104,557
2011	3,086	8,691	355,104	82	437	27	103,327
2012	3,024	8,743	345,871	81	441	25	102,226
2013	2,956	9,541	309,772	88	442	28	102,784
2014	2,941	10,415	282,398	91	446	24	104,389
2015	3,042	11,318	268,799	92	448	23	109,820
2016	3,059	11,770	259,853	92	447	23	109,663
2017	2,961	11,654	254,103	83	446	41	108,871
2018	3,013	11,601	259,728	80	447	23	110,053
2019	2,994	11,799	253,759	82	428	23	111,929

Historical Values (2010 - 2019):

Col. (16) represents actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve monthly values.

Col. (16) = Schedule 2.1 Col. (4) + Schedule 2.1 Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Schedule 2.2: Gulf
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Industrial			Railroads &	Street & Highway	Sales to Public	Sales to Ultimate
Year	GWh	Average No. of Customers	Average kWh Consumption Per Customer	Railways GWh	Lighting GWh	Authorities GWh	Consumers GWh
2010	1,686	275	6,133,961	0	26	0	11,359
2011	1,799	273	6,586,591	0	25	0	11,040
2012	1,725	267	6,453,071	0	25	0	10,663
2013	1,700	258	6,581,320	0	21	0	10,620
2014	1,849	258	7,165,343	0	25	0	11,075
2015	1,798	249	7,235,499	0	25	0	11,086
2016	1,830	247	7,402,625	0	25	0	11,082
2017	1,740	255	6,815,486	0	26	0	10,809
2018	1,757	253	6,931,497	0	28	0	11,132
2019	1,756	250	7,026,958	0	28	0	11,079

Historical Values (2010 - 2019):

Col. (16) represents actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve monthly values.

Col. (16) = Schedule 2.1 Col. (4) + Schedule 2.1 Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Schedule 2.2
Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Industrial			Railroads &	Street & Highway	Sales to Public	Sales to Ultimate
Year	GWh	Average No. of Customers	Average kWh Consumption Per Customer	Railways GWh	Lighting GWh	Authorities GWh	Consumers GWh
FPL							
2020	3,071	12,244	250,838	80	401	20	110,993
2021	3,152	12,722	247,739	80	399	20	111,934
Gulf							
2020	1,738	251	6,923,042	0	28	0	10,816
2021	1,663	251	6,624,257	0	28	0	10,752
Integrated FPL and Gulf							
2022	4,874	13,270	367,281	80	417	20	122,968
2023	4,875	13,414	363,429	80	420	20	123,619
2024	4,875	13,469	361,955	80	429	20	124,619
2025	4,876	13,559	359,611	80	450	20	125,333
2026	4,877	13,648	357,302	80	456	20	126,195
2027	4,876	13,640	357,499	80	462	20	127,156
2028	4,876	13,589	358,814	80	462	20	128,398
2029	4,876	13,570	359,309	80	462	20	129,154

Projected Values (2020 - 2029):

Col. (10) and Col.(15) represent forecasted energy sales that do not include the impact of incremental conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve monthly values.

Col. (16) = Schedule 2.1 Col. (4) + Schedule 2.1 Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Schedule 2.3: FPL
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWh	Utility Use & Losses GWh	Net Energy For Load GWh	Average No. of Other Customers	Total Average Number of Customers
2010	2,049	7,870	114,475	3,523	4,520,328
2011	2,176	6,950	112,454	3,596	4,547,051
2012	2,237	6,403	110,866	3,645	4,576,449
2013	2,158	6,713	111,655	3,722	4,626,934
2014	5,375	6,204	115,968	3,795	4,708,829
2015	6,610	6,326	122,756	3,907	4,775,382
2016	6,623	5,334	121,619	3,994	4,840,279
2017	6,406	5,468	120,745	4,100	4,901,886
2018	6,790	5,604	122,447	4,334	4,961,330
2019	7,315	5,924	125,168	4,749	5,061,525

Historical Values (2010 - 2019):

Col. (19) represents actual energy sales including the impacts of existing conservation.

Col. (19) = Schedule 2.2 Col. (16) + Col. (17) + Col. (18). Historical NEL includes the impacts of existing conservation and agrees to Col. (5) on schedule 3.3. Historical GWH, prior to 2011, are based on a fiscal year beginning 12/29 and ending 12/28. The 2011 value is based on 12/29/10 to 12/31/11. The 2012-2019 values are based on calendar year.

Col. (20) represents the annual average of the twelve monthly values.

Col. (21) = Schedule 2.1 Col. (5) + Schedule 2.1 Col. (8) + Schedule 2.2 Col. (11) + Col. (20).

Schedule 2.3: Gulf
History of Energy Consumption
And Number of Customers by Customer Class

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWh	Utility Use & Losses GWh	Net Energy For Load GWh	Average No. of Other Customers	Total Average Number of Customers
2010	409	750	12,518	559	430,030
2011	382	663	12,086	564	432,403
2012	339	597	11,598	572	434,441
2013	330	602	11,552	579	437,698
2014	332	629	12,037	598	442,370
2015	330	580	11,996	610	447,557
2016	331	618	12,030	609	453,140
2017	318	588	11,715	574	459,050
2018	302	623	12,057	589	464,682
2019	257	407	11,742	608	464,884

Historical Values (2010 - 2019):

Col. (19) represents actual energy sales including the impacts of existing conservation.

Col. (19) = Schedule 2.2 Col. (16) + Col. (17) + Col. (18). Historical NEL includes the impacts of existing conservation and agrees to Col. (5) on schedule 3.3.

Col. (20) represents the annual average of the twelve monthly values.

Col. (21) = Schedule 2.1 Col. (5) + Schedule 2.1 Col. (8) + Schedule 2.2 Col. (11) + Col. (20).

Schedule 2.3
Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWh	Utility Use & Losses GWh	Net Energy For Load GWh	Average No. of Other Customers	Total Average Number of Customers
			FPL		
2020	6,283	5,797	123,073	5,100	5,117,332
2021	5,788	5,412	123,134	5,458	5,165,574
			Gulf		
2020	298	601	11,715	603	472,190
2021	293	597	11,643	606	480,130
			Integrated FPL and Gulf		
2022	5,717	6,115	134,800	6,419	5,700,622
2023	5,793	6,189	135,600	6,783	5,755,134
2024	5,871	6,271	136,761	7,141	5,806,073
2025	5,948	6,260	137,540	7,499	5,855,142
2026	6,028	6,318	138,541	7,858	5,904,561
2027	5,955	6,363	139,474	8,215	5,952,978
2028	6,040	6,437	140,874	8,572	5,999,654
2029	6,125	6,472	141,751	8,931	6,046,421

Projected Values (2020 - 2029):

Col. (19) represents forecasted energy sales that do not include the impact of incremental conservation and agrees to Col. (2) on Schedule 3.3.

Col. (19) = Schedule 2.2 Col. (16) + Col. (17) + Col. (18).

Col. (20) represents the annual average of the twelve monthly values.

Col. (21) = Schedule 2.1 Col. (5) + Schedule 2.1 Col. (8)
+ Schedule 2.2 Col. (11) + Col. (20).

Schedule 3.1: FPL
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2010	22,256	419	21,837	0	990	1,181	815	758	20,451
2011	21,619	427	21,192	0	1,000	1,281	821	781	19,798
2012	21,440	431	21,009	0	1,013	1,351	833	810	19,594
2013	21,576	396	21,180	0	1,025	1,417	833	839	19,718
2014	22,935	1,155	21,780	0	1,010	1,494	843	866	21,082
2015	22,959	1,303	21,656	0	878	1,523	826	873	21,255
2016	23,858	1,367	22,491	0	882	1,548	836	888	22,140
2017	23,373	1,393	21,980	0	910	1,560	825	903	21,639
2018	23,217	1,338	21,879	0	866	1,571	866	916	21,485
2019	24,241	1,292	22,949	0	852	1,579	879	926	22,510

Historical Values (2010 - 2019):

Col. (2) and Col. (3) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9) and may incorporate the effects of load control if load control was operated on these peak days. Col. (2) represents the actual Net Firm Demand.

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col.(6) values for 2015-on reflect a hardware communications issue identified in 2015 that was subsequently resolved. A number of participating customers did not respond to FPL's efforts to reach them or refused access to correct the equipment problem at their home. As a result, these customers were removed from the program.

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak.
Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col.(6) + Col. (8).

Schedule 3.1: Gulf
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2010	2,525	88	2,437	0	0	178	0	192	2,525
2011	2,535	89	2,446	0	0	186	0	198	2,535
2012	2,351	76	2,275	0	0	206	0	212	2,351
2013	2,362	74	2,288	0	0	229	0	220	2,362
2014	2,437	75	2,362	0	0	243	0	224	2,437
2015	2,495	78	2,417	0	0	256	0	231	2,495
2016	2,508	76	2,432	0	0	261	0	231	2,508
2017	2,434	74	2,360	0	0	266	0	232	2,434
2018	2,491	80	2,411	0	0	268	0	233	2,491
2019	2,472	75	2,397	0	0	269	0	233	2,472

Historical Values (2010 - 2019):

Col. (2) and Col. (3) are actual values for historical Summer peaks and include the effects of conservation (Col. 7 & Col. 9).

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (10) is derived by the formula Col. (10) = Col. (2) - Col. (6) - Col. (8).

Schedule 3.1
Forecast of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
FPL									
2020	24,624	1,540	23,084	0	856	11	907	11	22,838
2021	24,720	1,367	23,353	0	865	23	918	27	22,887
Gulf									
2020	2,464	64	2,399	0	0	5	0	1	2,458
2021	2,496	64	2,432	0	0	12	0	2	2,481
Integrated FPL and Gulf									
2022	27,220	1,384	25,836	0	873	55	928	47	25,317
2023	27,564	1,406	26,158	0	882	76	939	65	25,602
2024	27,953	1,399	26,554	0	894	98	949	84	25,927
2025	28,349	1,405	26,944	0	915	105	960	92	26,278
2026	28,775	1,425	27,350	0	939	105	971	92	26,668
2027	29,143	1,357	27,786	0	963	105	982	92	27,001
2028	29,592	1,376	28,216	0	987	105	993	92	27,415
2029	30,195	1,396	28,799	0	1,012	105	1,004	92	27,983

Projected Values (2020 - 2029):

Col. (2) - Col. (4) represent forecasted peak and do not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) through Col. (9) represent incremental and cumulative load management, and incremental conservation.
All values are projected August values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and curtailable programs/rates.

Col. (10) represents a "Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include Lee County and FKEC whose loads are served by FPL.

Schedule 3.2: FPL
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2010	24,346	500	23,846	0	895	687	721	291	22,730
2011	21,126	383	20,743	0	903	717	723	303	19,501
2012	17,934	382	17,552	0	856	755	722	314	16,356
2013	15,931	348	15,583	0	843	781	567	326	14,521
2014	17,500	890	16,610	0	828	805	590	337	16,083
2015	19,718	1,329	18,389	0	822	835	551	346	18,345
2016	17,031	1,087	15,944	0	742	858	570	352	15,719
2017	17,172	1,098	16,074	0	759	861	577	364	15,836
2018	19,109	1,262	17,847	0	750	864	588	369	17,771
2019	16,795	1,432	15,363	0	706	867	613	379	15,476

Historical Values (2010 - 2019):

Col. (2) and Col. (3) are actual values for historical Winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9) and may incorporate the effects of load control if load control was operated on these peak days. Col. (2) represents the actual Net Firm Demand. For year 2011, the actual winter peak occurred in December of 2010.

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col.(6) values for 2015-on reflect a hardware communications issue identified in 2015 that was subsequently resolved. A number of participating customers did not respond to FPL's efforts to reach them or refused access to correct the equipment problem at their home. As a result, these customers were removed from the program.

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak.
Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col.(6) + Col. (8).

Schedule 3.2: Gulf
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2010	2,553	99	2,454	0	0	289	0	154	2,553
2011	2,495	89	2,406	0	0	297	0	157	2,495
2012	2,139	70	2,069	0	0	317	0	165	2,139
2013	1,766	90	1,676	0	0	341	0	169	1,766
2014	2,694	85	2,609	0	0	356	0	172	2,694
2015	2,492	74	2,418	0	0	369	0	176	2,492
2016	2,043	80	1,963	0	0	374	0	176	2,043
2017	2,211	89	2,122	0	0	377	0	177	2,211
2018	2,809	70	2,739	0	0	379	0	178	2,809
2019	2,066	66	2,000	0	0	381	0	178	2,066

Historical Values (2010 - 2019):

Col. (2) and Col. (3) are actual values for historical Winter peaks and include the effects of conservation (Col. 7 & Col. 9).

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (10) is derived by the formula Col. (10) = Col. (2) - Col. (6) - Col. (8).

Schedule 3.2
Forecast of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
FPL									
2020	19,959	1,230	18,729	0	712	3	634	10	18,599
2021	20,250	1,248	19,002	0	721	5	640	20	18,863
Gulf									
2020	2,256	69	2,187	0	0	0	0	0	2,256
2021	2,293	68	2,225	0	0	4	0	1	2,287
Integrated FPL and Gulf									
2022	22,369	1,068	21,301	0	733	16	647	33	20,939
2023	22,617	1,108	21,509	0	746	24	653	46	21,149
2024	22,861	1,139	21,722	0	758	32	659	58	21,353
2025	23,103	1,140	21,963	0	778	40	666	70	21,548
2026	23,388	1,172	22,216	0	804	40	671	70	21,803
2027	23,608	1,118	22,490	0	829	40	676	70	21,992
2028	23,941	1,155	22,786	0	855	40	681	70	22,294
2029	24,293	1,181	23,112	0	880	40	686	70	22,616

Projected Values (2020 - 2029):

Col. (2) - Col. (4) represent forecasted peak and do not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) through Col. (9) represent incremental and cumulative load management, and incremental conservation.
All values are projected January values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and curtailable programs/rates.

Col. (10) represents a "Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include Lee County and FKEC whose loads are served by FPL.

Schedule 3.3: FPL
History of Annual Net Energy for Load (GWh)
(All values are "at the generator" values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Actual Net Energy For Load GWh	Sales for Resale GWh	Utility Use & Losses GWh	Actual Total Retail Sales (GWh)	Load Factor(%)
2010	119,220	2,487	2,259	114,475	2,049	7,870	104,557	53.7%
2011	117,460	2,683	2,324	112,454	2,176	6,950	103,327	59.4%
2012	116,083	2,823	2,394	110,866	2,237	6,403	102,226	58.9%
2013	117,087	2,962	2,469	111,655	2,158	6,713	102,784	59.1%
2014	121,621	3,125	2,529	115,968	5,375	6,204	104,389	57.7%
2015	128,555	3,232	2,568	122,756	6,610	6,326	109,820	61.0%
2016	127,481	3,254	2,608	121,619	6,623	5,334	109,663	58.0%
2017	126,680	3,278	2,655	120,747	6,406	5,470	108,871	59.0%
2018	128,465	3,300	2,718	122,447	6,790	5,604	110,053	60.2%
2019	131,241	3,322	2,751	125,168	7,315	5,924	111,929	58.9%

Historical Values (2010 - 2019):

Col. (2) represents derived NEL not including conservation using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5)

Col. (3) & Col. (4) are annual (12-month) DSM values and represent total GWh reductions experienced each year.

Col. (8) is the Total Retail Sales calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (5) from this page and the greater of Col. (2) from Schedules 3.1 and 3.2 using the formula:
Col. (9) = ((Col. (5)*1000) / ((Col. (2) * 8760). Adjustments are made for leap years.

Schedule 3.3: Gulf
History of Annual Net Energy for Load (GWh)
(All values are "at the generator" values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Actual Net Energy For Load GWh	Sales for Resale GWh	Utility Use & Losses GWh	Total Retail Energy Sales (GWh)	Load Factor(%)
2010	13,256	388	350	12,518	409	750	11,359	56.0%
2011	12,864	417	361	12,086	382	663	11,040	54.4%
2012	12,453	482	374	11,598	339	597	10,663	56.2%
2013	12,502	551	399	11,552	330	602	10,620	55.8%
2014	13,048	595	416	12,037	332	629	11,075	51.0%
2015	13,056	630	430	11,996	330	580	11,086	54.9%
2016	13,097	637	430	12,030	331	618	11,082	54.6%
2017	12,789	642	432	11,715	318	588	10,809	54.9%
2018	13,138	647	435	12,057	302	623	11,132	49.0%
2019	12,828	650	436	11,742	257	407	11,079	54.2%

Historical Values (2010 - 2019):

Col. (2) represents derived NEL not including conservation using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5)

Col. (3) & Col. (4) are annual (12-month) DSM values and represent total GWh reductions experienced each year.

Col. (8) is the Total Retail Sales calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (5) from this page and the greater of Col. (2) from Schedules 3.1 and 3.2 using the formula:
Col. (9) = ((Col. (5)*1000) / ((Col. (2) * 8760). Adjustments are made for leap years.

Schedule 3.3
Forecast of Annual Net Energy for Load (GWh)
(All values are "at the generator"values except for Col (8))

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Forecasted Net Energy For Load without DSM GWh	Residential Conservation GWh	C/I Conservation GWh	Net Energy For Load Adjusted for DSM GWh	Sales for Resale GWh	Utility Use & Losses GWh	Forecasted Total Billed Retail Energy Sales w/o DSM GWh	Load Factor(%)
				FPL				
2020	123,073	30	35	123,007	6,283	5,538	111,252	56.9%
2021	123,134	56	65	123,013	5,788	5,538	111,808	56.8%
				Gulf				
2020	11,715	10	3	11,702	298	601	10,816	54.1%
2021	11,643	18	5	11,620	293	597	10,752	53.2%
				Integrated FPL and Gulf				
2022	134,800	108	103	134,588	5,717	6,133	122,949	56.4%
2023	135,600	144	138	135,318	5,793	6,167	123,640	56.0%
2024	136,761	181	175	136,405	5,871	6,217	124,673	55.6%
2025	137,540	181	175	137,184	5,948	6,252	125,340	55.2%
2026	138,541	181	175	138,185	6,028	6,297	126,216	54.8%
2027	139,474	181	175	139,118	5,955	6,339	127,180	54.5%
2028	140,874	181	175	140,518	6,040	6,402	128,432	54.1%
2029	141,751	181	175	141,395	6,125	6,442	129,184	53.5%

Projected Values (2020 - 2029):

Col. (2) represents Forecasted NEL and does not include incremental conservation.

Col. (3) & Col. (4) are forecasted values representing reduction on sales from incremental conservation

Col. (5) is forecasted NEL adjusted for incremental conservation.

Col. (8) is Total Retail Sales. The values are calculated using the formula: Col. (8) = Col. (2) - Col. (6) - Col. (7).
These values are at the meter.

Col. (9) is calculated using Col. (5) from this page and Col. (10) from Schedule 3.1 using the formula:
Col. (9) = ((Col. (5)*1000) / ((Col. (2) * 8760). Adjustments are made for leap years.

Schedule 4: FPL
Previous Year Actual and Two-Year Forecast of
Total Peak Demand and Net Energy for Load (NEL) by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2019 ACTUAL		2020 FORECAST		2021 FORECAST	
Month	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh
JAN	16,795	8,672	19,959	8,890	20,250	8,861
FEB	18,660	8,353	19,005	8,311	19,233	8,124
MAR	18,963	9,159	18,900	9,155	19,127	9,254
APR	20,106	9,899	20,255	9,522	20,499	9,598
MAY	22,580	11,417	22,150	10,879	22,416	10,987
JUN	24,241	11,775	23,700	11,437	23,792	11,428
JUL	23,583	12,481	24,190	12,312	24,284	12,274
AUG	22,861	12,145	24,624	12,402	24,720	12,425
SEP	23,653	11,803	23,652	11,439	23,745	11,430
OCT	21,776	11,633	22,210	10,732	22,296	10,711
NOV	19,855	9,001	19,601	8,962	19,678	8,978
DEC	17,249	8,830	18,737	9,030	18,810	9,064
Annual Values:		**125,168**		**123,073**		**123,134**

Col. (3) annual value shown is consistent with the value shown in Col.(5) of Schedule 3.3.

Cols. (4) through (7) do not include the impacts of cumulative load management, incremental utility conservation, or incremental load management.

Schedule 4: Gulf
Previous Year Actual and Two-Year Forecast of
Total Peak Demand and Net Energy for Load (NEL) by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2019 ACTUAL		2020 FORECAST		2021 FORECAST	
Month	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh
JAN	2,066	941	2,256	967	2,293	950
FEB	1,564	725	1,955	837	1,980	809
MAR	1,885	817	1,726	800	1,749	796
APR	1,734	808	1,733	809	1,756	801
MAY	2,260	1,087	2,137	991	2,165	986
JUN	2,444	1,210	2,359	1,146	2,389	1,146
JUL	2,426	1,291	2,464	1,254	2,496	1,254
AUG	2,374	1,187	2,411	1,240	2,442	1,239
SEP	2,472	1,163	2,265	1,078	2,294	1,076
OCT	2,284	959	1,997	909	2,023	906
NOV	1,951	730	1,710	794	1,732	792
DEC	1,862	825	1,894	889	1,919	888
Annual Values:		**11,742**		**11,715**		**11,643**

Col. (3) annual value shown is consistent with the value shown in Col.(5) of Schedule 3.3.

Cols. (4) through (7) do not include the impacts of incremental conservation.