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Gulf's Responses to Staff's Third Set of Interrogatories Nos. 11-16.

Fuel Price Forecasting

11. Please describe the steps the Company took to prepare its fuel price forecast for 2017. Discuss in your response whether any of the steps took to prepare this forecast were new or different from steps used in 2016, or in other prior periods.

Answer:

Southern Company Services (SCS), as Gulf Power's agent, prepares the short-term (current year +2) and long-term (year 4 and beyond) fuel price forecasts which extend through the Company's 10-year planning horizon and longer for resource planning. The short-term forecasts are developed by SCS Fuel Services for use in the system's fuel budgeting process and marginal pricing dispatch procedures. The long-term commodity forecasts are developed in the spring of each year for use in system planning activities. Charles River Associates (CRA) is the consultant used to develop long-term commodity forecasts utilizing a proprietary macro-economic model. This process is a collaborative effort between CRA and members of cross-functional Southern electric system (SES) planning teams, including Gulf Power personnel, and is governed by an SES executive team.

Fuel market-driving assumptions, developed in collaboration between CRA and SES personnel, are integrated into CRA's model to develop commodity forecast prices. These commodity forecasts are compared to both proprietary and public forecasts for reasonableness. Transportation prices are developed by SES personnel and are combined with the CRA commodity prices to produce the total delivered price forecast.

The delivered price of any fuel consists of a variety of components. The main components are commodity price and transportation cost. Domestic coal commodity prices are forecast on either a mine-mouth basis or free on board (FOB) barge basis, while import coals are forecast on an FOB ship basis at the port of import. Natural gas prices are forecast at the Henry Hub, Louisiana benchmark delivery point. Because mine-mouth coal prices vary by source, sulfur content, and Btu level, SES prepares commodity price forecasts for different coal classifications used on the SES. Because natural gas does not possess the same quality variations as coal, SES prepares a single commodity price forecast for natural gas at Henry Hub, and applies a basis differential between Henry Hub and the various pipelines serving SES plants.

Transportation costs, to be used in the delivered price forecast, are developed for potential sites when modeling generic unit additions in the resource planning process. Site-specific transportation costs are developed for existing units to produce delivered price forecasts for the fuel budget process. Similarly, when site-specific unit additions

are under consideration, site-specific transportation costs are developed for each option.

12. List the "inputs" or sources of information the Company relied upon in order to prepare its fuel price forecast for 2017.
    a. Identify each source of information the Company relied upon to prepare its fuel price forecast for 2017 and whether the source was internal or external.
    b. Discuss whether each source of information the Company relied upon to prepare its fuel price forecast for 2017 used public or proprietary information.
    c. Discuss whether each source of information the Company relied upon to prepare its fuel price forecast for 2017 was new or different from sources used in preparing the fuel price forecast for 2016, or in other prior periods.

Answer:

a. Fuel Price Forecasts are received from recognized independent consulting firms for natural gas, oil, and coal. The Company works with an outside consultant, Charles River Associates, to produce its fuel price commodity forecasts. Transportation prices are developed by SES personnel and are combined with the CRA commodity prices to produce the total delivered prices.

b. All CRA, SES, and purchased commodity forecasts are proprietary. Some public sources are used for comparison purposes.

c. The sources used in developing Gulf's 2017 fuel price forecast were the same sources used in 2016 and prior periods.

13. Is the Company planning on introducing any new steps or sources of information it will rely upon to prepare its fuel price forecast for the projected year 2018? If so, please provide a detailed description of each new steps and/or sources.

Answer:

No.

Forecasting megawatt-hour sales

14. Please describe the steps the Company used to prepare its forecast of megawatt-hour sales for 2017. Discuss in your response whether any of the steps used to prepare this forecast for 2017 were new or different from steps used in 2016, or in other prior periods.

Answer:

Residential Short-Term Energy Sales Forecast

The short-term residential energy sales forecast used in Gulf's 2017 energy sales forecast was developed using a multiple linear regression model. Monthly residential energy use per customer per billing day was projected based on historical data, normal weather, real disposable income per household, energy efficiency, and projected price of electricity. The model output was multiplied by the projected number of residential customers and the projected billing days to arrive at the total residential class energy.

Weather data was from the National Oceanic and Atmospheric Administration's (NOAA) Pensacola weather station. Gulf's retail service area is generally represented by three Metropolitan Statistical Areas (MSAs): Pensacola-Ferry Pass-Brent, Crestview-Fort Walton Beach-Destin, and Panama City. Economic data for these MSAs was provided by Moody's Analytics, which relied on the Bureau of Economic Analysis (BEA) and the U.S. Census Bureau for personal income and households, respectively.

The short-term residential energy sales forecast used in Gulf's 2017 energy sales forecast incorporated routine updates to include more recent historical data and to incorporate updated economic projections. The residential model added an energy efficiency variable to capture the effects of minimum codes and standards on residential use per customer. An additional binary was added for October 1998 to account for large residuals in that period and improve the accuracy of the model.

Commercial Short-Term Energy Sales Forecast

The short-term commercial energy sales forecast was developed using two separate multiple linear regression models, one for small commercial customers (rate schedules GS and Flat-GS) and one for large commercial customers (all other commercial rate schedules). Small commercial energy use per customer per billing day was projected based on historical data, normal weather, gross domestic product (GDP) per capita by MSA, and projected prices of electricity. Large commercial energy use per customer per billing day was also projected using historical data, normal weather, GDP per capita by MSA, and projected prices of electricity. The outputs of these regression models were then multiplied by their respective customer projections and projected billing days by month and then summed to the total commercial class.

Weather data was from NOAA's Pensacola weather station. Economic data was provided by Moody's Analytics, which relied on the BEA and the U.S. Census Bureau for GDP by MSA and population, respectively.

The short-term commercial energy sales forecasts used in Gulf's 2017 energy sales forecast incorporated routine updates to include more recent historical data and to incorporate updated economic projections. The small commercial model added a heating degree hour variable for the month of April to improve the accuracy of the model. No changes were made to the large commercial model.

Industrial Energy Sales Forecast

The short-term industrial energy sales forecast was developed using both on-site surveys of major industrial customers and historical average energy use per customer per billing day. Gulf's industrial account representatives identified expected load changes for their respective customers and these were combined with historical monthly usage patterns to arrive at the short-term forecasts of monthly sales to those major customers. The remaining smaller industrial customers were projected by using historical average energy use per customer per billing day multiplied by the projected number of small industrial customers and the projected number of billing days by month. The total industrial sales forecast was the sum of the sales to major industrial customers plus sales to smaller industrial customers. Long-term projections of industrial sales were developed using historical averages.

All Other Energy Sales Forecasts

The outdoor lighting energy sales forecasts were developed using historical growth rates and input from Gulf's lighting team.

The territorial wholesale energy sales forecast was developed using a multiple linear regression analysis, where wholesale energy purchases per day were estimated based on historical data, normal weather, and gross domestic product. The model output was then multiplied by the projected number of days by month to arrive at the total wholesale energy forecast. Weather data was from NOAA's Pensacola weather station. Economic data was provided by Moody's Analytics.

The forecast of company energy use was based on recent historical averages by month.

The energy sales forecasts for outdoor lighting, territorial wholesale energy sales, and company energy use incorporated routine updates for more recent historical data and updated economic projections, where applicable. The economic variable in the wholesale energy model was changed from real disposable income per household to GDP by MSA to better reflect the growth in wholesale energy sales. No other changes were made to the methodology, data sources, or third-party consultants involved.

15. List the "inputs" or sources of information the Company relied upon to prepare its megawatt-hour sales forecast for 2017.
    a. Identify each source of information the Company relied upon to prepare its megawatt-hour sales forecast for 2017 and whether the source was internal or external.
    b. Discuss whether each source of information the Company relied upon to prepare its megawatt-hour sales forecast for 2017 used public or proprietary information.
    c. Discuss whether each source of information the Company relied upon to prepare the its megawatt-hour sales forecast for 2017 was new or different from sources used in preparing the megawatt-hour sales forecast for 2016, or in other prior periods.

Answer:

Please see Gulf's response to Item No. 14. In addition, Gulf's sources of information used a mix of public and proprietary information, including customer-specific data.

16. Is the Company planning on introducing any new steps or sources of information it will rely upon to prepare its megawatt-hour sales forecast for the projected year 2018? If so, please provide a detailed description of each new steps and/or sources.

Answer:

No.

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF ESCAMBIA)

Docket No. 170001-EI

Before me the undersigned authority, personally appeared Susan D. Ritenour, Corporate Secretary, Treasurer, and Corporate Planning Manager of Gulf Power Company, and who on behalf of said corporation, being first duly sworn, deposes, and says that pursuant to Rule 1.340(a), Florida Rules of Civil Procedure, she verifies that the foregoing answers to the interrogatories are submitted on behalf of said corporation, and that the foregoing constitute true and correct answers to the best of her knowledge, information, and belief based on the information provided by others in the course of business. She is personally known to me.

Susan D Ritenour

Susan D. Ritenour
Corporate Secretary, Treasurer and
Corporate Planning Manager

Sworn to and subscribed before me this 7th day of July, 2017.

Melissa Darnes

Notary Public, State of Florida at Large

MELISSA DARNES
MY COMMISSION # FF 912696
EXPIRES: December 17, 2019
Bonded Thru Budget Notary Services