TECO
TAMPA ELECTRIC

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 110001-EI

FUEL & PURCHASED POWER COST RECOVERY

AND

CAPACITY COST RECOVERY

PROJECTIONS

JANUARY 2012 THROUGH DECEMBER 2012

TESTIMONY

OF

J. Brent Caldwell

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

J. BRENT CALDWELL

Q. Please state your name, address, occupation and employer.

A. My name is J. Brent Caldwell. My business address is 702 N. Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Director of Origination & Market Services.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelor Degree in Electrical Engineering from Georgia Institute of Technology in 1985 and a Master of Science in Electrical Engineering in 1988. I have over 15 years of utility experience with an emphasis in state and federal regulatory matters, natural gas procurement and transportation, fuel logistics and cost reporting, and business systems analysis. In October 2010, I assumed the long-term fuel origination responsibilities of Joann Wehle who was the previous witness in the fuel docket.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to discuss Tampa Electric's fuel mix, fuel price forecasts, potential impacts to fuel prices, and the company's fuel procurement strategies. I will address steps Tampa Electric takes to manage fuel supply reliability and price volatility and describe projected hedging activities. I also sponsor Tampa Electric's 2012 Risk Management Plan and Hedging Report submitted on August 1, and August 15, 2011 in this docket.

Q. Have you previously submitted testimony to this Commission?

A. Yes. I have filed testimony before this Commission in this docket on April 1, 2011, August 1, 2011 and August 15, 2011.

2012 Fuel Mix and Procurement Strategies

Q. What fuels will Tampa Electric's generating stations use in 2012?

A. In 2012, coal-fired generation is expected to be approximately 60 percent and natural-gas fired generation

40 percent of total generation. Generation from oil is expected to be less than one percent of the total expected generation.

Q. Please describe Tampa Electric's fuel supply procurement strategy.

A. Tampa Electric emphasizes flexibility and options in its fuel procurement strategy for all of its fuel needs. The company strives to maintain a large number of creditworthy and viable suppliers. Tampa Electric also attempts to diversify the location from which its supply is sourced. Similarly, the company attempts to maintain multiple delivery paths wherever possible. Tampa Electric believes that increasing the number of fuel supply options provides increased reliability and lower costs for customers.

Coal Supply Strategy

Q. Please describe Tampa Electric's coal usage and procurement strategy.

A. Tampa Electric uses coal as the sole fuel for the four pulverized-coal steam turbine units at Big Bend Station and as the primary fuel for the integrated-gasification

combine cycle Unit One at Polk Station. The coal-fired units at Big Bend Station are all fully scrubbed for sulfur-dioxide and nitrogen-oxides and are designed to burn high-sulfur Illinois Basin coal. Polk Unit One currently burns a mix of petroleum coke and low sulfur coal. Each plant has varying operational and environmental restrictions and requires fuel with custom quality characteristics such as ash content, fusion temperature, sulfur content, heat content and chlorine content. Since coal is not a homogenous product, fuel selection is based on these unique characteristics, price, availability, deliverability and creditworthiness of the supplier.

To minimize cost, maintain operational flexibility, and ensure reliable supply, Tampa Electric maintains a portfolio of bilateral coal supply contracts with varying term lengths: long, intermediate, and short. Tampa Electric monitors the market to obtain the most favorable prices from sources that meet the needs of the generating stations. The use of daily and weekly publications, independent research analyses from industry experts, discussions with suppliers, and coal solicitations aid the company in monitoring the coal market and shaping the company's coal procurement strategy to reflect current

market conditions. This allows for stable supply of reliable sources while still providing flexibility to take advantage of favorable spot market opportunities.

Q. Please summarize Tampa Electric's solid fuel, coal and petroleum coke, supply for 2011.

A. Tampa Electric supplied Big Bend's coal needs through a combination of two "base" coal supply agreements that continue through 2014 and a collection of shorter term contracts and spot purchases. These shorter term purchases allowed the supply to adjust for changing coal quality and quantity needs, operational changes and pricing opportunities.

Q. Has Tampa Electric entered into coal supply transactions for 2012 delivery?

A. Yes, Tampa Electric has contracted over two-thirds of its 2012 expected coal needs through bilateral agreements with coal suppliers to mitigate price volatility and ensure reliability of supply. In addition to the two "base" supply agreements for Big Bend Station, Tampa Electric has contracted for a portion of its needs through several shorter term purchases. Tampa Electric

anticipates the remaining solid fuel purchases for Big Bend Station and Polk Unit One will be procured through spot market purchases during the fourth quarter of 2011 and in 2012.

Coal Transportation

Q. Please describe Tampa Electric's solid fuel transportation arrangements?

A. Tampa Electric can receive coal at its Big Bend Station via both waterborne delivery and rail delivery. Once delivered to Big Bend, Polk Unit 1's solid fuel is re-delivered to Polk Station via trucks from Big Bend Station.

Q. Why does the company maintain multiple coal transportation options in its portfolio?

A. Bimodal solid fuel transportation to Big Bend Station affords the company and its customers 1) access to more potential coal suppliers providing a more competitive, overall delivered cost, 2) the flexibility to switch to either water or rail in the event of a transportation breakdown or interruption on the other mode, and 3) competition for solid fuel transportation contracts for

future periods.

Q. Did the bimodal solid fuel transportation prove useful in 2011?

A. Yes. Spring rains were particularly severe in the Midwest this year. Those rainfall quantities caused severe flooding for an extended period of time along the Mississippi River and many of its associated feeder rivers. The availability of rail as well as an adequate supply of inventory allowed Tampa Electric to mitigate any price impacts and avoid any supply interruptions.

Q. Will Tampa Electric continue to receive coal deliveries via rail in 2011 and 2012?

A. Yes. Tampa Electric expects to receive 1.8 million tons in 2011 and up to 2.1 million tons of coal in 2012 for use at Big Bend through the Big Bend rail facility.

As part of the CSX transportation agreement, Tampa Electric receives a per ton reimbursement for each ton of coal delivered, all of which is flowed through to customers through the fuel and purchased power cost recovery clause pursuant to the company's most recent

rate case final order.

Q. Please describe Tampa Electric's expectations regarding waterborne coal deliveries?

A. Tampa Electric expects to receive the balance of its solid fuel supply needs as waterborne deliveries to its unloading facilities at Big Bend Station. These deliveries may come through United Bulk Terminal, from other terminals along the Gulf Coast, or from foreign sources. The ultimate source is dependent upon quality, operational needs, and lowest overall delivered cost.

Natural Gas Supply Strategy

Q. How does Tampa Electric's natural gas procurement and transportation strategy achieve competitive natural gas purchase prices for long and short term deliveries?

A. Similar to its coal strategy, Tampa Electric uses a portfolio approach to natural gas procurement. This approach consists of a blend of pre-arranged base, intermediate and swing natural gas supply contracts complemented with shorter term spot purchases. The contracts have various time lengths to help secure needed supply at competitive prices and maintain the ability to

take advantage of favorable natural gas price movements. Tampa Electric purchases its physical natural gas supply from approved counterparties, enhancing the liquidity and diversification of its natural gas supply portfolio. The natural gas prices are based on monthly and daily price indices, further increasing pricing diversification.

Tampa Electric has improved the reliability and cost effectiveness of the physical delivery of natural gas to its power plants by diversifying its pipeline transportation assets, including receipt points, and utilizing pipeline and storage tools to enhance access to natural gas supply during hurricanes or other events that constrain supply. On a daily basis, Tampa Electric strives to obtain reliable supplies of natural gas at favorable prices in order to mitigate costs to its customers. Additionally, Tampa Electric's risk management activities reduce natural gas price volatility.

Q. Please describe Tampa Electric's diversified natural gas transportation arrangements.

A. Tampa Electric receives natural gas via the Florida Gas Transmission ("FGT") and Gulfstream Natural Gas System,

LLC ("Gulfstream") pipelines. The ability to deliver natural gas directly from two pipelines enhances the fuel delivery reliability of the Bayside Power Station, comprised of two large natural gas combine-cycle units and four aero derivative combustion turbines. Natural gas can also be delivered to Big Bend Station directly from Gulfstream to support the new aero derivative combustion turbine and to Polk Station from FGT to support the four natural gas combustion turbines at that station.

Q. Are there any changes to Tampa Electric's pipeline capacity for the balance of 2011 or 2012?

A. Yes. Florida Gas Transmission's Phase VIII upgrade went into service April 1, 2011. Tampa Electric contracted for a small portion of this Phase VIII capacity. Tampa Electric reserved 50,000 MMBtu of capacity beginning in April of 2011. The Phase VIII capacity provides enhanced reliability for delivery of gas supply and allows Tampa Electric to meet its peak system demands.

Q. What actions does Tampa Electric take to enhance the reliability of its natural gas supply?

A. Tampa Electric maintains natural gas storage capacity

with Bay Gas Storage near Mobile, Alabama to provide operational flexibility and reliability of natural gas supply. Currently the company reserves 1,250,000 MMBtu of storage capacity.

In addition to storage, Tampa Electric maintains diversified natural gas supply receipt points in FGT Zones 1, 2 and 3. Diverse receipt points reduce the company's vulnerability to hurricane impacts and provide access to lower priced gas supply.

Tampa Electric also reserves capacity on the Southeast Supply Header ("SESH"). SESH connects the receipt points of FGT and other Mobile Bay area pipelines with natural gas supply in the mid-continent. Mid-continent natural gas production has grown and continues to increase through non-conventional shale gas and the Rockies Express. Thus, SESH gives Tampa Electric access to secure, competitively priced on-shore gas supply for a portion of its portfolio.

Q. Has Tampa Electric entered any natural gas supply transactions for 2012 delivery?

A. Yes, by the end of September 2011, over two-thirds of the

company's expected natural gas requirements will be under contract.

Q. Has Tampa Electric reasonably managed its fuel procurement practices for the benefit of its retail customers?

A. Yes. Tampa Electric diligently manages its mix of long, intermediate, and short term purchases of fuel in a manner designed to reduce overall fuel costs while maintaining electric service reliability. The company's fuel activities and transactions are reviewed and audited on a recurring basis by the Commission. In addition, the company monitors its rights under contracts with fuel suppliers to detect and prevent any breach of those rights. Tampa Electric continually strives to improve its knowledge of fuel markets and to take advantage of opportunities to minimize the costs of fuel.

Projected 2012 Fuel Prices

Q. How does Tampa Electric project fuel prices?

A. Tampa Electric reviews fuel price forecasts from sources widely used in the industry, including the New York Mercantile Exchange ("NYMEX"), Wood Mackenzie, the Energy

Information Administration, and other energy market information sources. Futures prices for energy commodities as traded on the NYMEX form the basis of the natural gas and No. 2 oil market commodity price forecasts. The commodity price projections are then adjusted to incorporate expected transportation costs and location differences.

Coal prices and coal transportation prices are projected using contracted pricing and information from industry-recognized consultants and published indices and are specific to the particular quality and mined location of coal utilized by Tampa Electric's Big Bend Station and Polk Unit 1. Final as-burned prices are derived using expected commodity prices, associated transportation costs.

Q. How do the 2012 projected fuel prices compare to the fuel prices projected for 2011?

A. Projected fuel prices are expected to increase in 2012 compared to 2011 as the global economy is projected to improve and inventory surpluses diminish.

Q. What are the market drivers of the expected 2012 price of

natural gas?

A. The current market forecasts are projecting a slight increase to natural gas pricing in 2012 as compared to 2011. An anticipated improvement to the economy and market adjustment to shale gas production is expected to raise the price slightly but not dramatically.

Q. What are the market drivers of the change in the price of coal?

A. International demand for coal and petroleum coke has increased the price of coal for several years, and particularly in 2011 for Illinois Basin coal as it found ways to be exported to Europe, South Africa and India. Additionally, the addition of FGD scrubbers on a number of coal plants has made the lower cost Illinois Basin coal viable in those units thus increasing the demand and price for Illinois Basin coal. Conversely, low natural gas prices caused higher cost coal-fired generation to be displaced by lower cost natural gas combined cycle units. These changes are expected to increase the price of Illinois Basin coal in 2012 and beyond. However, with the contract pricing of Tampa Electric's base agreements, the impact should be reduced through 2014.

Q. Did Tampa Electric consider the impact of higher than expected or lower than expected fuel prices?

A. Yes. Tampa Electric prepared a scenario in which the forecasted fuel prices were 35 percent higher for both natural gas and No. 2 oil. Similarly, Tampa Electric prepared a scenario in which the forecasted fuel prices were 35 percent lower for both natural gas and No. 2 oil. Due to Tampa Electric's generating mix as well as its Commission approved hedging strategy the impact the fuel cost under either scenario is mitigated.

Risk Management Activities

Q. Please describe Tampa Electric's risk management activities.

A. Tampa Electric complies with its risk management plan as approved by the company's Risk Authorizing Committee. Tampa Electric's plan is described in detail in the Risk Management plan filed August 1, 2011 in this docket.

Q. Has Tampa Electric used financial hedging in an effort to help mitigate the price volatility of its 2011 and 2012 natural gas requirements?

A. Yes. Tampa Electric hedged a significant portion of its 2011 natural gas supply needs and a portion of its expected 2012 natural gas supply needs in accordance with its plan. Tampa Electric will continue to take advantage of available natural gas hedging opportunities in an effort to benefit its customers, while complying with the company's approved Risk Management Plan. The current market position for natural gas hedges was provided in the Hedging Information Report submitted on August 15, 2011.

Q. Are the company's strategies adequate for mitigating price risk for Tampa Electric's 2011 and 2012 natural gas purchases?

A. Yes, the company's strategies are adequate for mitigating price risk for Tampa Electric's natural gas purchases. Tampa Electric's strategies balance the desire for reduced price volatility and reasonable cost with the uncertainty of natural gas volumes. These strategies are described in detail in Tampa Electric's Risk Management Plan filed August 1, 2011.

Q. How does Tampa Electric determine the volume of natural gas it plans to hedge?

A. Tampa Electric projects the quantity or volume of natural gas expected to be consumed in its power plants. The volume hedged is driven by the projected total natural gas consumption in its combined-cycle plants by month and the time until that natural gas is needed. Based on those two parameters, the amount hedged is maintained within a range authorized by the company's Risk Authorizing Committee and monitored by the Risk Management department. The market price of natural gas does not affect the percentage of natural gas requirements that the company hedges since the objective is price volatility reduction, not price speculation.

Q. Were Tampa Electric's efforts through July 31, 2011 to mitigate price volatility through its non-speculative hedging program prudent?

A. Yes. Tampa Electric has executed hedges according to the risk management plan filed with this Commission, which was approved by the company's Risk Authorizing Committee. On April 1, 2011, the company filed its 2010 hedging results as part of the final true-up process. Additionally, Commission Order No. PSC-08-0316-PAA-EI, issued May 14, 2008, requires the utilities to file a Hedging Information Report showing the results of hedging

activities from January through July of the current year. The Hedging Information Report facilitates prudence reviews through July 31 of the current year and allows for the Commission's prudence determination at the annual fuel hearing. Tampa Electric filed its Hedging Information Report showing the results of its prudent hedging activities from January through July 2011 in this docket on August 15, 2011.

Q. Does Tampa Electric expect its hedging program to provide fuel savings?

A. No. The primary objective of the company's hedging program is to reduce fuel price volatility as approved by the Commission. Tampa Electric employs a well-disciplined hedging program. This discipline requires consistent hedging based on expected needs and avoidance of speculative hedging strategies aimed at out-guessing the market. This discipline insures hedges will be in place should prices spike and also means hedges are in place when prices decline. Using this disciplined approach means that much of the volatility and uncertainty in natural gas prices are removed from the fuel cost used to generate electricity for our customers, but does not guarantee fuel savings.

Q. Does this conclude your testimony?

A. Yes, it does.