DUKE ENERGY FLORIDA

Matthew R. Bernier
SENIOR COUNSEL
Duke Energy Florida, LLC

July 3, 2017

Via ELECTRONIC DELIVERY

Ms. Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: *Analysis of IOUs' Hedging Practices; Docket No. 170057-EI*

Dear Ms. Stauffer:

On behalf of Duke Energy Florida, LLC ("DEF"), please find enclosed for electronic filing in the above-referenced docket:

- Direct Testimony of Christopher A. Menendez;
- Direct Testimony of Joseph McCallister with attached Exhibit No. ___ (JM-1) and redacted Exhibit No. ___ (JM-2).

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Respectfully,

s/ Matthew R. Bernier
Matthew R. Bernier

MRB/at
Enclosures

DUKE ENERGY FLORIDA

DOCKET NO. 170057-EI

Analysis of IOUs' Hedging Practices

DIRECT TESTIMONY OF
Christopher A. Menendez

July 3, 2017

Q. Please state your name and business address.

A. My name is Christopher A. Menendez. My business address is 299 First Avenue North, St. Petersburg, Florida 33701.

Q. Have you previously filed testimony before this Commission?

A. Yes, I have provided testimony in multiple dockets, including the fuel and purchased power cost recovery clause docket and environmental cost recovery clause docket.

Q. Have your duties and responsibilities remained the same since your testimony was last filed?

A. Yes.

Q. What is the purpose of your testimony?

A. It is my understanding that one or more intervening parties to the instant docket believe that certain customers should be allowed to opt-out of fuel hedging and that an issue for Commission consideration will be whether each company should be ordered to develop and offer an opt-out tariff. While I cannot comment on the specific impacts of an opt-out policy without

detailed knowledge of its provisions, my testimony presents to the Commission the overall challenges to design, implement, and maintain such a policy.

Q. Do you have any exhibits to your testimony?

A. No.

Q. Should the Commission approve a customer opt-out policy for hedging?

A. No. If the Commission continues to find that hedging is in customers' best interest, then hedging should apply to all customers.

Q. Is there any Commission precedent approving an opt-out policy for certain customers?

A. No. There is no hedging opt-out precedent in the Fuel and Purchased Power Cost Recovery Clause ("Fuel Clause"). However, the Commission addressed and denied opt-out of energy efficiency programs in the Energy Conservation Cost Recovery Clause in Order No. PSC-16-0011-FOF-EI, Docket No. 140226-EI based on equity and fairness concerns, and implementation issues, factors that apply to fuel hedging opt-out as well.

Q: Would a hedging opt-out ever be appropriate?

A. No. Unlike opting out of an energy efficiency program, which may be justified if a particular customer can show, among other things, that similar or even more energy savings have been achieved (thereby meeting the goal of the energy efficiency program), there is no corresponding benefit that a customer who has opted out of hedging can provide. A hedging opt-out is simply another way for customers to disagree with the overall policy of hedging, and the only appropriate way to address that disagreement is for the Commission to order that the utilities stop hedging altogether. But a customer cannot decide to avoid charges for an approved policy simply because it disapproves of the policy.

Q. Is the development of an opt-out policy a simple task?

A. No, it is complex. While a specific program has not been introduced at this time, the general implementation of such a program may, at a minimum, require modifications to billing systems, accounting systems and processes, ratemaking and filing schedules, tariff sheets and internal and external reporting, in addition to the determination of customer eligibility and parameters for program participation. Also, incremental costs would be incurred in the design, implementation, and maintenance of such a program, including but not limited to additional employee(s).

Q: If the Commission Ordered the Utilities to implement an opt-out program, who should be responsible for incremental costs incurred in order to implement and maintain the opt-out program?

A. Any and all costs necessary to design, implement, and maintain a hedging opt-out policy should be borne entirely by opt-out customers and should be recovered through the fuel clause.

Q. Does this conclude your testimony?

A. Yes.

DUKE ENERGY FLORIDA
Docket No. 170057-EI

Analysis of IOUs' Hedging Practices

DIRECT TESTIMONY OF
JOSEPH MCCALLISTER

July 3, 2017

I. Introduction/Background/Purpose

Q. Please state your name and business address.

A. My name is Joseph McCallister. My business address is 526 South Church Street, Charlotte, North Carolina 28202.

Q. By whom are you employed and in what capacity?

A. I work for Duke Energy Progress, an affiliate company of Duke Energy Florida, LLC ("DEF" or "Company") as the Director of Natural Gas, Oil and Emissions. I am responsible for the natural gas, fuel oil and emission group activities in the Fuel Procurement Section of the Fuels and Systems Optimization Department for the Duke Energy regulated generation fleet. This group is responsible for the natural gas and fuel oil acquisition and transportation needed to support the generation needs for Duke Energy Indiana ("DEI"), Duke Energy Kentucky ("DEK"), Duke Energy Carolinas ("DEC"), Duke Energy Progress ("DEP"), and DEF. In addition, this group is responsible for the emission allowance ("EA") position management for DEI, DEK, DEC, DEP and DEF.

Q. Have you testified before the Commission in previous proceedings?

A. Yes.

Q. Please briefly describe your work experience.

A. I received a Bachelor Degree in Business Administration majoring in Accounting from The Ohio State University. While at Duke Energy, from 2003 until mid-2006, I served as the Director of Portfolio and Market Risk Assessment through mid-2006, the Director of Gas and Oil Trading from mid-2006 through early 2009, the Director of Gas, Oil and Power from early 2009 to June 2012, and Director of Natural Gas, Oil and Emissions from July 2012 to the present. Prior to my tenure with Duke Energy, I spent approximately 10 years in management positions at energy trading and asset generation based companies. Summary experiences over this time period include gas and power scheduling, real time power trading and scheduling management, commercial management of gas storage and transportation agreements, commercial management of fuel and power optimization activities for unregulated generation assets and wholesale contract agreements, and corporate planning. The Company relies on information contained in my testimony and exhibits when conducting its affairs.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide DEF's proposed alternative to the "legacy hedging" program, the Out of the Money ("OTM") call option approach, and to provide additional context regarding the natural gas hedging program proposed by Staff's witness

Mr. Gettings in Docket No. 160001-EI, and as expressed in the workshop sessions in this docket.

Q. Do you have any exhibits to your testimony?

A. Yes, I am sponsoring two exhibits.

- Exhibit No. __ (JM-1), Illustration of OTM Call Options;
- Exhibit No. __ (JM-2), OTM Call Option Approach versus Gettings Approach, Back-Test results for the period 2006-2011.

II. Is it in the consumers' best interest for the utilities to continue natural gas financial hedging activities?

Q. Does DEF believe that the continued financial hedging of natural gas is in its customers' best interest?

A. DEF is following Commission policy. The determination of whether continued financial hedging of natural gas ("hedging") is in the best interests of customers is for the Commission to make. DEF does believe that hedging provides benefits to customers by mitigating fuel price volatility. Natural gas prices are constantly changing and volatile, and neither DEF nor any forecaster can accurately predict where actual prices will be in the future. In addition, DEF's forecasted 2017 natural gas fuel mix for its owned generation was approximately 74%, meaning that natural gas price changes can have a significant impact on customers' bills.

If the Commission decides to adjust or amend the hedging practices in Florida, or decides to terminate hedging altogether, DEF will comply with any Commission orders.

III. If hedging is determined to be in the customers' best interest, what changes, if any, should be made to the manner in which electric utilities conduct their natural gas financial hedging activities?

Q. If the Commission determines it is in the consumers' best interests for hedging to continue, what changes to the manner in which DEF hedges do you believe the Commission should consider?

A. As discussed in DEF's post-workshop comments filed in this docket on March 6, 2017, before changes to hedging practices can be considered and decided upon, the Commission must first determine the objective of hedging going forward. In summary, previous orders of this Commission have identified reducing price variability and volatility in fuel costs paid by customers as the goal of the utilities' hedging programs, and DEF's hedging activities to date have been executed in a manner consistent with its approved hedging plans to meet that objective.

When the goal of volatility mitigation was established, the Commission acknowledged that hedging could result in significant lost opportunities for savings in fuel costs paid by customers.

To the extent the Commission decides hedging is in the customers' best interest and the current goals of hedging are determined to be the correct goals going forward, the Commission could consider changes to amounts the utilities hedge as a way to minimize potential hedge losses but no other changes would be necessary.

The current docket is based on direction provided by the Commission in Order No. PSC-15-0586-FOF-EI. On page 9 of that order, the Commission directed the parties to the Fuel Clause Docket to "explore possible changes to the current hedging protocol that will minimize potential losses to the customers."

The proposed hedging objectives outlined by Staff witness Mr. Gettings are to protect against significant upward price movements while simultaneously placing limits on hedge costs. Adoption of these goals would signal a departure from past Commission precedent, but if adopted, DEF outlined in its March 6, 2017 filing an alternative recommendation of utilizing Out of the Money ("OTM") call options to achieve the proposed hedging objectives going forward.

Q. Would the proposed OTM call option approach address the proposed hedging objectives of providing upward price risk mitigation while addressing potential hedge costs?

A. Yes. The OTM call option hedging approach protects against upward price increases while providing the flexibility to establish limits on hedging costs. DEF would establish hedging parameters at the outset and establish hedge cost ranges to achieve the desired

level of protection for Commission review as part of its annual Risk Management Plan ("RMP"). DEF believes this approach is the most efficient, straightforward, risk responsive approach to achieve the goals as outlined by the staff witness Mr. Gettings.

Q. Can you please explain how OTM call options work?

A. Yes. A call option is a financial agreement that gives a buyer the right, but not the obligation, to buy a commodity at a specified strike price for a specific time period. An OTM call option is a call option with a strike price above the current market price for a specific period. The strike price of the OTM call option would be established at an upside price threshold. As an illustration, assuming the current natural gas market price for 2018 is $3.00 per MMBtu, and for a portion of forecasted usage DEF established an upside price threshold of $3.50 per MMBtu for this period, DEF would procure an OTM call option with a strike price of $3.50 per MMBtu for a targeted percentage of the natural gas DEF desired to hedge for this time period. DEF would solicit quotes from multiple counterparties at the time of execution to buy the lowest cost OTM call option for each applicable transaction. In summary, the price paid for the OTM call option at the time of the transaction is established by the market based on the market price of the underlying commodity, the uncertainty in the market around that underlying price (i.e., volatility), the strike price of the OTM call option, and the length of time the option has to expire.[1]

[1] Interest rates are also a factor in option pricing; however, the impact on option prices is small.

Q. How do OTM call options provide upside cost protections while establishing hedge cost limits?

A. As outlined, a call option is a financial agreement that gives a buyer the right, but not the obligation, to buy a commodity at a specified strike price (gas price) for a specific time period. An OTM call option provides upside price protection for the customer if prices rise above the strike price but also provides customers an opportunity for full market participation if the commodity price remains below the strike price, or in a market where prices decline. This is illustrated on Exhibit No. __ (JM-1).

In addition, DEF will develop parameters to provide greater certainty on hedging cost limits by establishing a budget range that would be utilized to procure OTM call options over time. Thus, by utilizing OTM call options, DEF is providing a risk responsive approach that meets both objectives of providing upside cost protection while providing established limits on hedging costs.

Q. Is the OTM call option approach a risk responsive approach?

A. Yes. The hedging framework utilizing OTM call options is a risk responsive approach. As positions are entered into, it simultaneously protects against the upside price threshold while providing limits on hedging costs, as well as allowing customers full participation in declining market prices.

The OTM call option positions are risk responsive because the corresponding hedge level percentages will continuously and automatically change as prices and volatility change.

The hedge ratio position in place will increase if volatility and/or prices increase to strike price levels without further discretion or speculation by the company. In addition, assuming prices and volatility decline, the hedge ratio position will decrease automatically, without the insertion of speculative market timing and unknown market foresight, and without making judgments regarding the correct time to suspend hedging, limit hedging, or even exit previous hedges to limit hedge costs.

In summary the underlying hedge percentage ratio increases on OTM call option positions as prices and volatility increase, and decrease as prices and volatility decrease. This provides a framework that is risk responsive to managing upside price risk while providing the customers all the benefits of participating in declining market trends.

Q. Please explain how DEF would create a risk management plan using the OTM call option approach.

A. DEF has not yet designed a specific RMP using the OTM call option approach, but in general terms, DEF would perform a review of natural gas price statistical scenarios and potential impact on fuel costs, and would establish upside price risk thresholds and the percentage of its projected natural gas burn to be hedged. Based on this review, DEF would gather option pricing and establish an options budget range for purchasing options within the upside price thresholds and the targeted hedge ratios. This analysis would be included in the Company's annual RMP. DEF would then use the budgeted amount to purchase the options in the market over time to achieve the risk protection identified in its annual RMP.

Q. Can you please explain how the OTM call option approach differs from Mr. Gettings' approach?

A. Yes. In summary, the Gettings approach calls for executing hedges to increase hedge percentage ratios as volatility and/or price increase, and taking steps such as limiting hedging, suspending hedging, or exiting previously entered hedges to decrease hedge ratios as volatility and/or price decrease.

As outlined above, the proposed OTM call option approach does this same thing continuously and automatically without the insertion of discretion regarding timing, price levels, or amount. The hedge level percentage position created by the OTM call option transactions increase as volatility and price increase without further action being required of the electric utility. In addition, as prices decline, the hedge level position of the OTM call option transactions decrease automatically without the insertion of speculative market timing.

Stated another way, Mr. Gettings proposes to replicate a call option by doing manually what options do automatically.

Q. Does DEF believe that the OTM call option approach is superior to Mr. Gettings' proffered approach?

A. Yes. First, if the Commission wants upward price protections while providing for limits on hedge costs, the OTM call option approach fulfills those objectives. In addition, because the Commission will approve the OTM call option budget range as part of the

RMP filed in the annual fuel docket, this budget will become the hedge cost limit. Because of the multiple decision points and multiple transactions required to implement and manage Mr. Gettings' proposed approach, the total cost of the approach to achieve the desired cost protection goal over the hedging horizon cannot be known in advance.

Moreover, the OTM call option approach can be implemented with existing tools and resources, in a relatively short time frame, and is far simpler to review. Whereas Mr. Gettings' approach has numerous decision points, each of which call for the exercise of some level of discretion prior to acting (or not acting) on each transaction, all of the OTM call option approach decision points (target hedge percentage, price levels, and options budget) can be established and approved by the Commission in advance. Therefore, the OTM call option approach is easily audited and reviewed under the current framework. Staff auditors would be able to review the amount of natural gas that was hedged using the OTM call options, whether the company was within budget, and will be able to validate the reported results.

Q. Has DEF performed any analysis to compare the OTM call approach versus the proposed Gettings' approach?

A. Yes. The company's quantitative analytics group performed an historical (2006-2011) back-test analysis of the proposed OTM call approach using the assumptions outlined in Exhibit No. __ (JM-2). As shown on Exhibit No. __ (JM-2), when compared to results of a back-test provided by Mr. Gettings of his proposed method, the proposed OTM call option approach would have resulted in lower overall estimated costs while providing

protection against price volatility, and allowing for participation in decreasing price markets. Under the parameters tested, the OTM call option approach would have cost approximately $250 million less than Mr. Gettings' proposal with fewer discretionary parameters.

Q. You have mentioned the numerous decision points involved in Mr. Gettings' approach, can you elaborate on what you are referring to?

A. Yes. The hedging approach that Mr. Gettings proposes requires further definition before it can be acted upon. That is, Mr. Gettings has outlined the components that he believes should be included in a hedging program and discussed the metrics he would use to drive decision making, but has acknowledged that plan design will be company-specific, and given the level of discretion inherent in implementation, implementation will necessarily be company specific as well.[2]

While DEF agrees that each company is different and each company should be permitted to exercise sufficient discretion to design a hedging program that meets its specific objectives, DEF's concern with Mr. Gettings' proposed approach is the amount of discretion that is inherent in implementing this approach.

Under the Gettings approach, as volatility or VAR measurements indicate a pre-established cost threshold may be breached over a certain confidence interval and holding

[2] For example, he states: "Finally, the hedge strategy will play a big role in what can be accomplished. Tolerance pairs can be established by simulating hedge strategies against forward price curves for volatile periods, and then choosing the pairing that fits the firms [sic] appetite." Docket No. 160001-EI, DN-07781-16, p. 21, ll. 6-8.

period, the company would be required to take some action to defend that threshold. The decision parameters would be what action to take (e.g., enter a swap transaction, purchase a call-option), over what tenor (e.g., the prompt month, season or year in the future), and to what extent (e.g., how much natural gas should be hedged at that time). In addition, the same actions would need to be determined to limit potential hedge costs for potential downward movements in prices utilizing a certain confidence period and holding period. To limit hedge costs as proposed by the Gettings approach, the company may need to limit or suspend any future hedge transactions or even exit previously executed hedging transactions. In some cases this may require the company to, in effect, hedge against a previously executed hedge to limit "potential hedge cost" even though the company may still have a significant unhedged position. This inserts additional discretionary execution variables as noted above.

Moreover, all of these discretionary actions are based on volatility and VAR measurements and reporting that ultimately do not provide any confidence or predictive capability of where prices will ultimately settle for any given month, the level of future prices, or if price trends will begin to move up or down over time. This leaves a good deal of latitude regarding where those thresholds would be set and what specific actions should be taken at each threshold with no way to determine what they should optimally be. Indeed, the thresholds and types of actions taken (beyond for example "increase hedge percentage ratios if prices/volatility rise") are quite arbitrary when viewed in advance but can always be judged in hindsight. Doing the OTM options removes the need for these judgments and provides transparency for the Commission.

Q. Are there any other concerns with the level of discretion included in the proposed Gettings approach?

A. Yes. For example, what standard for review of DEF's actions would be applied given the number of discretionary variables? Even under risk reporting as proposed by Mr. Gettings, as noted earlier, none of these risk measurements predict the level of future volatility or prices, where prices will ultimate settle, nor the direction or the timing of when prices can change direction. Would there be a review of each trade to understand the precise market conditions, volatility, prices and information that existed at the time of a defensive or contingent transaction to make a determination of prudence?

In addition, with respect to measuring hedge effectiveness under the proposed Gettings approach, it has been summarized that fuel price hedging activities are in the customers' best interest when executed in an economically efficient manner.[3] How is an economically efficient hedge defined, interpreted, or calculated when all hedges are executed at the prevailing market price at any given time? The point of these questions is that while it is easy to say that the prudence standard does not permit second-guessing of management decisions based on information that was unknown and unknowable at the time (e.g., market outcomes), the framework as proposed by Mr. Gettings injects multiple opportunities for parties to argue "what the utility should have known" based on the eventual outcome of each individual hedging transaction executed over time.

Q. Is there any other reason that the multiple decision points gives you concern?

[3] *See* Staff's Recommendation, pages 6-8, Docket No. 170057-EI, filed March 27, 2017.

A. Yes. In addition to injecting an excess of discretion into the execution of the RMP, the multiple decision points are simply unnecessary to accomplish the goals outlined by Mr. Gettings. As discussed above, Mr. Gettings' goals can be achieved through the use of call-options, a readily available financial tool. Simply put, his method is unnecessarily complicated and, based on historical back-testing, less cost-effective than the simpler OTM call option approach.

Q. If the Commission were to order DEF to implement the Gettings approach, how would DEF proceed?

A. DEF would follow the will of the Commission and begin taking steps to implement the approach; however, DEF estimates that full implementation would take approximately two years. During this time period, DEF would need to hire or re-assign a dedicated quantitative professional to perform the initial setup of the VAR risk metrics and reporting templates, begin to perform and test the constant market-variable monitoring required under this approach, study the resulting metrics over time to assist with the development of the RMP, and then project test using "mock hedges" to gain confidence in the ability to implement the approach. Additionally, DEF may also need to hire additional consulting resources to perform independent valuations of DEF's mock hedging performance to review internally and potentially with staff and interveners to ensure the results and approach are consistent with the intent of the new program. Furthermore, DEF would seek to recover these incremental costs through the fuel clause.

IV. If changes are made to the conduct of natural gas financial hedging activities, what regulatory implementation process is appropriate?

Q. Do you believe any change to the regulatory implementation process is necessary?

A. No, I do not.

Q. Can you explain why no changes are necessary?

A. Yes, I can. As I will discuss below, the regulatory framework currently in place is sufficient to allow review of whatever manner of hedging the Commission determines is appropriate moving forward. Of course, if the Commission determines that hedging should be ceased, this issue becomes moot.

The current framework provides that each company engaging in hedging files an RMP that outlines its hedging goals and strategy to meet those goals. The parties and staff are able to take discovery on the respective plans, and if they so desire, to offer tweaks or alternatives via testimony. The Commission then reviews the plans, testimony, and other evidence in the record and can either approve the plans as presented, or take other action as it deems appropriate. Once a company has an approved plan, as long as it acts in accordance with that plan, its actions are deemed prudent.

This process provides regulatory certainty and ample opportunity for review of each proposed plan and the actions taken thereunder. It also limits the opportunity for

hindsight review of actions based on knowledge that the company could not have possessed at the time it acted.

Q. If the Commission approved Mr. Gettings' approach, do you still believe that the current framework would be sufficient?

A. Yes, in fact I think it is imperative that, if the Commission were to approve Mr. Gettings' approach, no material changes are made to the regulatory review framework. As discussed earlier, one of the major concerns the proposed approach presents is the potential for parties, staff, and the Commission to second-guess a company's actions based on the eventual market outcomes. DEF believes if Mr. Gettings' approach is adopted, the only way to make it functional from the Company's perspective is to eliminate second-guessing during the prudence review stage.

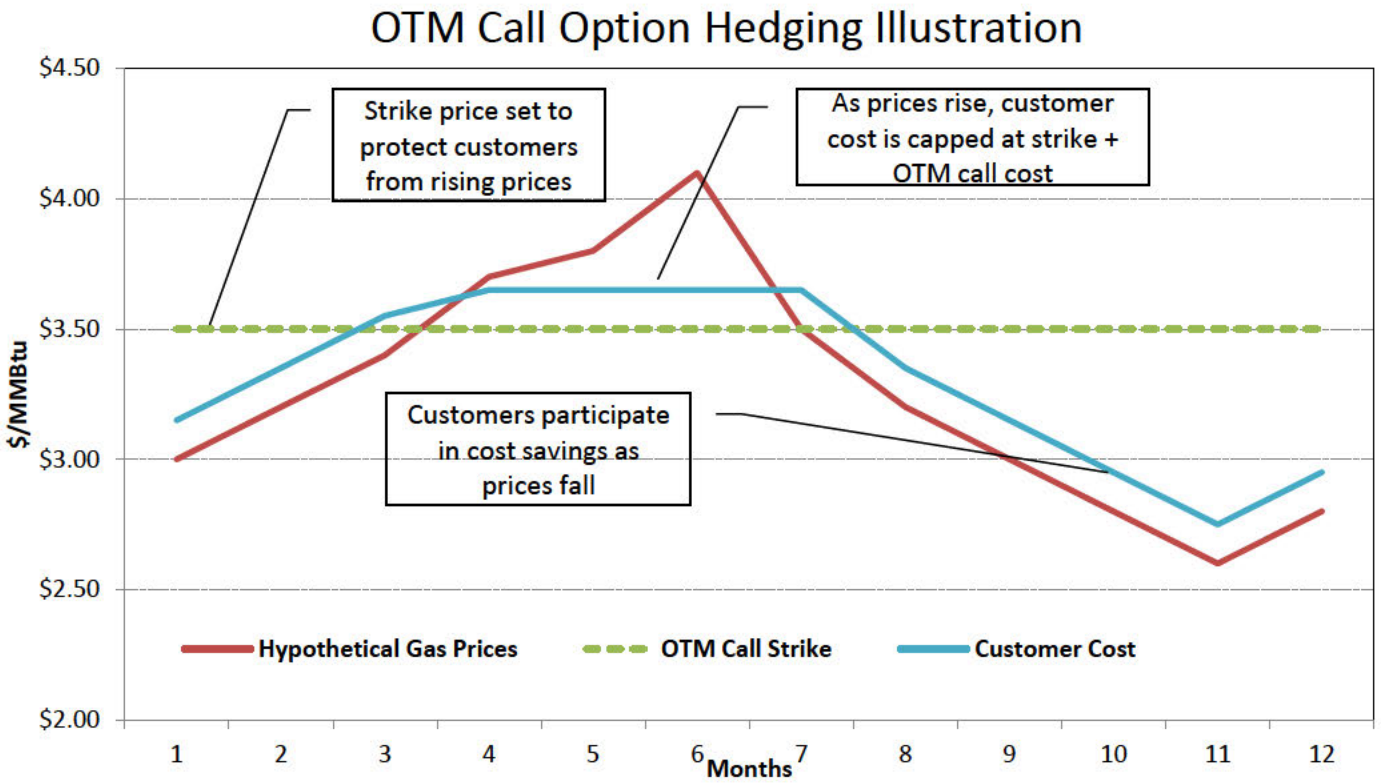
Q. Does this conclude your testimony?

A. Yes.

Hedging Illustration: Out of the Money (OTM) Call Options

Customers participate in fuel cost savings as natural gas prices fall and their exposure to rising prices is capped with call options. Chart illustrates the variation in customer cost (for hedged portion of fuel burn) as hypothetical gas prices rise and fall above/below the strike price.

- As prices rise, customer cost is capped at strike price plus cost of OTM call
- As prices fall, customers participate in cost savings minus cost of OTM call



[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

[redacted]