BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Docket to Address the Hedging Practices of Electric Utilities used to Mitigate the Rising Costs of Fuel	)))	**File No. EW-2013-0101**

STAFF REPORT

COMES NOW the Staff ("Staff") of the Missouri Public Service Commission ("Commission"), by and through counsel, and for its Report pursuant to the Commission's order dated March 4, 2013, in this matter respectfully states:

I. Summary

So far, Staff has conducted two workshops in this docket. Participants included representatives of Missouri's investor-owned electric utilities and local natural gas distribution companies ("LDCs") (collectively "IOUs"). No broad agreement has been reached about how to evaluate whether an IOU's hedging program is cost effective, but discussions have highlighted the challenge of judging an IOU's gas hedging program in hindsight. As large new supplies of natural gas become available, and as electric power markets continue to evolve, it will be important for utilities and regulators to discuss how to hedge effectively in the current market.

Staff recommends a few additional workshops with the IOUs to gather additional information concerning the items discussed in sections C, D, E and F below. Staff also recommends holding regular meetings with electric utilities, much like the meetings already held with the LDCs to discuss individual hedging policies.

II. Introduction

The Commission opened this working docket on September 5, 2012, in response to a suggestion made by KCP&L Greater Missouri Operations Company ("GMO") during the third prudence review of GMO's fuel adjustment clause. In that case, the Commission denied Staff's allegation that, among other things, GMO imprudently relied on an "overly rigid, market-insensitive cross hedging strategy"[1] and should therefore return nearly $15 million to customers.

During that case, GMO suggested that the Commission provide additional guidance regarding the use of natural gas hedging, and implement a process to avoid similar disputes over its hedging programs in the future. The Commission found this request reasonable and ordered this investigatory docket:

> "to review policies or procedures with regard to electric companies' hedging programs that will hopefully assist the utilities with developing effective hedging programs that serve the public interest by mitigating the rising costs of fuel."[2]

On October 5, 2012, Staff recommended the Commission include the LDCs in the workshop docket to help create a comprehensive discussion. That day, the Commission directed notice upon the investor-owned gas local distribution companies and ordered both the investor-owned electric utilities and the LDCs to participate.

This is more than just a local issue. In July 2011, the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC) urged state regulators to give serious consideration to a report by the Task Force on Ensuring Stable Natural Gas Markets.[3] Convened by the Bipartisan Policy Center and the American Clean Skies Foundation,

[1] EO-2011-0390, EFIS No. 61, *Staff's Position Statement*, filed May 24, 2012.
[2] *Id.*, EFIS No. 132, *Report and Order*, p. 65-66, filed September 4, 2012.
[3] http://bipartisanpolicy.org/projects/energy/naturalgas

the Task Force commissioned the Brattle Group to prepare a study titled, *Managing Natural Gas Price Volatility: Principles and Practices Across the Industry*.[4] Both reports encourage utilities to closely monitor gas hedging options, and to engage regulators in discussing optimal hedging strategies that make sense for customers.

III. Staff Report on Workshop Progress

The remainder of this report addresses Commission orders 1.a through 1.h included in its March 4, 2013, *Order Directing Staff To File A Comprehensive Report and Setting Deadline for Responses*.

A. First Workshop, November 14, 2013

Staff invited IOUs to attend this workshop and to provide a general overview of their hedging practices.[5] Attendees included representatives from Ameren Missouri ("Ameren"), Kansas City Power & Light Company ("KCPL"), GMO, The Empire District Electric Company, Liberty Utilities, Summit Utilities, Summit Natural Gas, Laclede Gas Company ("Laclede"), Missouri Gas Energy ("MGE"), and The Empire District Gas Company. The parties discussed issues that should be addressed in subsequent workshops.

The parties agreed to a second workshop to discuss specific questions:

1. What is a hedge?
2. Why is it important to hedge in this natural gas market?
3. What are the goals of your hedging program?
4. Are those goals still relevant in the current market?
5. Should the utility's hedging goals change in response to predictions about the future of the market?
6. Should hedging gains and losses even out over time?
7. How predictable are the volumes to be hedged?
8. Is there a matching between the physical supply volume under contract and the hedge instrument volumes and prices?
9. Is a "buy and hold" strategy the prevailing practice? Is it optimal?

[4] http://bipartisanpolicy.org/library/research/managing-natural-gas-price-volatility-principles-and-practices-across-industry

[5] The presentations are filed in EW-2013-0101, EFIS Nos. 13, 14, 15, and 16.

10. What methods are employed to test "hedge effectiveness"?
11. Should utility's shareholders have some risk in the success or failure of a utility's hedging program?
12. Should utilities have a written hedging plan?

B. Second Workshop, January 31, 2013

The second workshop included a Staff presentation on recent changes in the natural gas market, and a roundtable discussion of the questions above. The following parties signed the attendance list: Natelle Dietrich (Staff), Connie Carlile (Empire), Dean Cooper (Brydon, Swearengen & England P.C.), Kurt Gregson (MGE), Mike Noack (MGE), Martha Wankum (SNG), John Borgmeyer (Staff), Chuck Hyneman (Staff), Dave Sommerer (Staff), Jeff Keevil (Staff), John Rogers (Staff), Dana Eaves (Staff), Jim Lowery (Smith Lewis, LLC), Dana Beane (Ameren), Jim Massmann (Ameren), Linda Nunn (KCPL), Jim Fisher (Fischer & Dority, P.C. and KCPL), Ed Blunk (KCPL), Kwang Choe (Staff). Laclede, KCPL, Empire, and Liberty Utilities participated by phone.

1. Staff's presentation

Staff began the second workshop with a presentation[6] on the natural gas market, showing dramatic volatility between 2000 and 2010, with tight supplies relative to demand producing high prices in the first half of the decade. Hurricanes Katrina and Rita shut down production in much of the Gulf of Mexico in 2005, causing another high price spike. Prices for natural gas (along with other energy commodities) spiked again in 2008.

Staff's presentation shows current low prices as a result of new supply from shale deposits, with forecasts of steady but stable price increases coinciding with rising demand over the next 20 years. Strong supplies and expanding gas infrastructure means that storms or other isolated events will likely cause less price volatility in the future compared to 2000-2010.

[6] EFIS No. 24, EW-2013-0101.

Nevertheless, the price of natural gas is still subject to some degree of volatility as a result of accidents, environmental incidents, or new environmental or financial regulations.

2. Second Workshop Discussion

The second workshop discussion was designed to facilitate open discussion between Staff and representatives of Missouri gas and electric utilities. It was not the aim of this discussion to agree upon recommendations, and the discussion was not transcribed. What follows is Staff's overview of the discussion and is not intended to reflect the views or positions of Staff or the participants on the items discussed. Staff recommends the Commission direct participants to clarify or expand on these points, if they choose, in response to this report.

C. List of Issues Identified and Discussed During the First and Second Workshop

1. What is a hedge?

Participants stated that the purpose of a hedge is to reduce volatility, not to reduce price as compared to the daily spot market. There are two types of natural gas hedges: "physical" hedges, such as storage of gas for later use, and "financial" hedges—instruments such as futures contracts, options, collars and swaps.[7] Typically, electric utilities rely on financial hedges because they do not own sufficient pipeline capacity or other storage to execute physical hedges.

2. Why is it important to hedge in the current natural gas market?

Participants stated that even in a natural gas market with a more stable outlook, hedging is still an important part of providing a reliable supply of electricity, because the future always remains a mystery. Volatility in the price of natural gas could be the result of any number of possible events that could significantly affect the price of natural gas. For example, an explosion, groundwater contamination, or other accident could curtail supply. Or, a significant shift to wind

[7] For a helpful glossary on these terms, see Ken Costello, *Speculation in the Natural Gas Market: What It Is and What It Isn't; When It's Good and When It's Bad*, National Regulatory Research Institute, November 2008. http://www.nrri.org/documents/317330/a8d8ce13-f527-49c1-8993-2c3e1f92a40e

power could influence the demand for natural gas—participants pointed out that the wind isn't always blowing, which means electric utilities could end up using much more gas-fired generation to complement intermitted wind resources. Another potential source of volatility is manipulation[8] or regulation[9] of financial hedging instruments.

3. What are the goals of your hedging program?

Participants stated that, even when prices look stable, the goal of a hedging program is to mitigate risk, stabilize prices and provide reliable supply. "Beating the market" or turning profit through speculation should not be the goal of a utility hedging program. Some participants stated that one of the goals of a hedging program for electric utilities should be that the hedging program should result in the lowest cost of fuel, given the agreed-upon and accepted level of cost to mitigate significant price volatility in the underlying commodity.

4. Are those goals still relevant in the current market?

Yes. Hedging should be viewed as the cost of mitigating risk, and the gas market is not without risk.

5. Should a utility's hedging goals change in response to predictions about future markets?

Yes, hedging is necessary because no prediction is ever perfect. Appropriate use of hedging instruments can take advantage of the current relatively low price of natural gas.

6. Should hedging gains and losses even out over time?

Participants explained that gains and losses would only "even out" over time if the market moved up and down in a perfect sine wave, with the exact same inputs and outputs across the market.

[8] For example, see *Hunter v. FERC*, 2013 WL 1003666 (U.S. Ct. Apps. Wash. D.C. 2013).
[9] Participants stated that the Dodd-Frank Wall Street Reform and Consumer Protection Act could affect utility gas hedging programs.

In addition, the cost of financial instruments is not limited to just the cost of price volatility. Hedging transfers market risk from the purchaser of the hedge to the seller of the hedge, so the price of the hedge reflects the value of the transferred risk. Like any type of insurance, hedging costs money.[10] Trying to perfectly average gains and losses of derivatives over time could create distorted incentives in a utility's risk management strategy.

7. How predictable are volumes to be hedged?

Participants stated that an electric utility's need for natural gas varies, depending on the economics of deploying gas-fired plants as compared to other types of generation or purchase of wholesale power, and on shifting load demands, transmission constraints, and reliability considerations.[11] Electric utilities frequently participate as both buyers and sellers in daily gas markets and wholesale power markets to provide service for uncertain aspects of their load, such as sudden demand shifts caused by unexpected changes in the weather.

The complex interplay between unpredictable loads, hedges, gas prices, and wholesale electric prices means that even if an electric utility has hedged its gas needs at an attractive price, that price alone will not necessarily determine whether or not the utility actually uses its gas plants to meet a specific demand for electricity at a specific time. This is another reason why, in the view of some participants, it is difficult to assess the effectiveness of an electric utility's natural gas hedges.

[10] For further reading on this topic, see Jeff D. Makholm, Eugene T. Meehan, and Julia E. Sullivan, *Ex Ante or Ex Post? Risk, Hedging and Prudence in the Restructured Power Business*, The Electricity Journal, April 2006, Vol. 19, Issue 3, p. 18. http://www.nera.com/67_5108.htm

[11] For an overview of how electric utilities hedge natural gas for gas-fired generation, see The Brattle Group, *Managing Natural Gas Price Volatility: Principles and Practices Across the Industry*, pgs. 43-45.

8. Is there a matching between the physical supply volume under contract and the hedge instrument volumes and prices?

An electric utility may hedge natural gas for its power plants on a three-year horizon, with changes in hedging policy occurring closer to actual delivery. An electric utility's hedging strategy is different when the utility owns natural gas storage capacity to save for base load power generation.

Participants agreed that electric utilities hedge based on expected need, not for the purposes of making off-system sales. A utility will adjust hedge volumes based on changes in their expected power needs.

9. Is "buy and hold" strategy the prevailing practice? Is it optimal?

Participants agreed that the strategy of "buy and hold," as opposed to frequent buying and selling forward contracts, is the industry norm.

10. What methods are employed to test "hedge effectiveness"?

A simple analysis of "hedge effectiveness" is no easy task, given the sheer number of complex decisions which electric utilities make in the hour-by-hour process of buying and selling power to meet their native load. Trying to determine whether a hedging strategy produced the "lowest cost" for energy is only possible by comparing the hedges to other options that become visible only in hindsight.

Generally, utility risk management policies do not have a specific test to measure the effectiveness of a hedging program—the program is thought to be "effective" to the extent it follows the overall hedging strategy. The company's risk management teams may discuss hedging strategy and effectiveness.

An analysis of price deviation could provide a measure of hedge effectiveness.

11. Should a utility's shareholders have some risk in the success or failure of a utility's hedging program?

Participants stated that whoever receives the benefit of hedging should take the risk. If a utility's fuel cost (including hedging cost) is included in its cost of service, shareholders bear some of the risk of hedging decisions due to the effects of regulatory lag. Including hedging costs in a utility's fuel clause[12] shifts the risks and benefits of hedging to the customer.

12. Should utilities have a written hedging plan?

Utilities' risk management policies address hedging, although details regarding specific strategies and analysis vary.[13]

D. List of Potential Solutions

As discussed above, one of the main problems identified in this workshop is the difficulty of assessing hedging decisions in an after-the-fact prudence analysis. The number of decisions made each year is vast, the variables are complex and uncertain. In this workshop and across the industry, there is little agreement on exactly how to determine the "effectiveness" of a particular hedging strategy in a prudence review.[14] Litigating hedging strategy can be contentious and expensive.

Based on workshop discussions so far, several viable solutions to hedging issues have been identified.

1. The Kansas gas hedge program: The second workshop included some general discussion about how the Kansas Corporation Commission (KCC) treats hedging.

[12] Some researchers suggest that the traditional fuel adjustment clause may not be well-suited to the complex issues that arise when a utility seeks to recover costs associated with hedging. *Ex Ante or Ex Post*, p. 21.
[13] For a complete discussion of goals, targets, metrics and controls for utility hedging programs, see Brattle Group study, p. 32.
[14] Hedging is an art of forecast, while prudence reviews tend to analyze results. For a review of some inconsistent decisions on prudence cases in different states, *Ex Ante or Ex Post*, p. 21.

As part of electric utilities' requests for an Energy Cost Adjustment (ECA) mechanism, the Kansas Corporation Commission ordered jurisdictional electric utilities to submit applications for Commission approval of a Gas Hedge Program. For example, in 2005, the KCC approved a stipulation and agreement between the KCC staff, Aquila, Inc., and the Citizens' Utility Ratepayer Board (CURB).[15] The parties agreed that the company's gas hedging program was in the public interest, and expressly agreed that the agreement "is intended to avoid the time and expense of any further proceedings in this matter."[16] Among other things, the parties made general agreements regarding hedged volumes, months to be hedged, price cap, hedge instruments used, and timing of hedge placement. Aquila retained discretion over the details of the program, and agreed to submit monthly reports to Staff and CURB throughout the implementation period. Aquila recovered its hedging costs through its energy clause, and passed through to customers "all payoffs, positive or negative, associated with the settlement of financial derivatives."[17]

2. The Missouri LDC model

A second option is for the Commission to consider a rule for electric utilities similar to the Commission's rule for gas companies regarding natural gas price volatility mitigation.

Missouri Commission Rule 4 CSR 240-40.018 "represents a statement of commission policy that natural gas local distribution companies should undertake diversified natural gas purchasing activities as part of a prudent effort to mitigate upward natural gas price volatility and secure adequate natural gas supplies for their customers." As part of prudent planning, the rule provides that "natural gas utilities should consider the use of a broad array of pricing structures,

[15] Kansas Corporation Commission Docket No. 06-AQLE-494-HED, *Order Granting Joint Motion and Approving Stipulation and Agreement.*
[16] *Id*., *Joint Motion for an Order Approving Stipulation and Agreement*, Agreement 7.
[17] *Id.* Agreement 5.B.

mechanisms, and instruments," including storage, fixed price contracts, options, collars, outsourcing/agency agreements, futures contracts, OTC swaps and options and "other tools utilized in the market for cost-effective management of price and/or usage volatility."[18]

Missouri LDCs periodically meet confidentially with Staff and the Office of the Public Counsel to discuss their hedging strategies.

3. Informal presentations on electric utility hedging programs

In lieu of Kansas-style applications or an LDC-style rule for electric utilities, electric utilities could informally agree to periodically discuss their hedging strategies with Staff and OPC. Similar to presentations currently provided by LDCs, electric utilities could discuss the past performance and future goals of their hedging programs in confidential meetings with Staff and OPC.

E. Viability of Proposed Solutions

Each of the three options mentioned above addresses some of the issues related to electric utilities hedging natural gas, but in Staff's view option No. 3 above is the most viable way to proceed at this time.

Regarding option No. 1, in Staff's opinion it would be premature at this time for the Missouri PSC to adopt a formal, Kansas-style approval process. As discussed above, the natural gas industry is just a few years into dramatic access to new supplies; meanwhile, utilities' use of natural gas is also evolving, based on new developments in wind power and regional electricity markets. The full effects of these developments might not yet be known. Given the dramatic changes in the natural gas market since 2008, periodic, informal, free discussions and further study constitute the most viable short-term course of action.

[18] 4 CSR 240-40.018.

Depending on further discussions in this docket, a time- and resource-intensive rulemaking process may not be necessary. The need for more formal process or rulemaking can be reassessed as the parties' knowledge evolves.

F. Alternatives to Hedging

To date, the workshop has not spent significant time discussing alternatives to financial hedging instruments. More discussion will be required to assess the viability of other strategies to manage the risk of price volatility. Staff and workshop participants have identified the following potential alternatives to hedging:

1. Allow utilities to establish a "rainy day fund" for price volatility

Workshop participants briefly discussed a simple type of "rainy day fund" to mitigate price volatility. In this alternative, a utility could collect, in a separate fund, extra money from customers for fuel costs over a certain period. If fuel prices rise, the extra revenue covers the increase; if fuel prices decline, the money flows back to the customers.

2. Long-term contracts

Participants have not discussed the viability of using long-term contracts that fix the terms for delivery of gas over a period of several years, although in recent years gas market participants have given fresh consideration to long-term "relational" natural gas contracts that allow for re-negotiation of certain terms.[19]

3. Acquisition of gas reserves

Some large gas consumers have sought to manage price risk by developing an interest in gas production and/or storage.[20] Participants in this workshop have not discussed whether this is a viable option for Missouri electric utilities.

[19] *Task Force On Ensuring Stable Natural Gas Markets Report*, pgs. 50-52.
[20] *Id*.

G. Evaluating Hedging Programs

So far, discussions in this workshop have covered the challenges inherent in after-the-fact, hindsight reviews of complex hedging strategies without reaching any unanimous conclusions about the best way to determine whether a specific hedging program is worth its cost. This issue is not inherent to Missouri—recent industry-wide research on the subject recommends utilities and regulators work together to design hedging strategies to meet specific goals and objectives, rather than litigate hedging results after the fact.[21]

In simple terms, hedging is analogous to insurance. How much price volatility insurance do utility customers need? How much should they pay for it? These are, in Staff's view, questions of public policy. Therefore, rather than recommend a universal test for "effective hedging," Staff recommends engaging in continued discussions to determine optimal hedging goals for each utility and their customers.[22]

H. Rulemaking

Staff does not recommend the Commission open a rule-making working case to address hedging practices at this time. As explained above, electric utilities' involvement in the gas market continues to evolve as gas supply expands and as electric power markets continue their integration. Instead of opening a rulemaking working case, Staff recommends the Commission keep this workshop docket open for further discussions.

[21] See *Task Force on Ensuring Stable Natural Gas Markets*, p. 60; Brattle Group, p. 52.
[22] The NRRI's Ken Costello provides helpful discussion topics covering regulatory functions related to hedging, along with broad components of a utility hedging plan, and some questions regulators should ask utilities about rationale, design, execution and review. *Natural Gas Hedging: Should Utilities and Regulators Change Their Approach?* May 2011 pgs. 19-22. http://www.nrri.org/pubs/gas/NRRI_gas_hedging_May11-10.pdf

I. Staff Recommendations

A. Staff recommends the Commission leave this docket open for the purpose of scheduling a third workshop with the Missouri IOUs to gather additional information concerning the items discussed in sections C, D, E and F above; and

B. Staff recommends that each electric utility in the Commission's jurisdiction schedule a meeting between the utility, Staff and the Office of the Public Counsel to further discuss individual hedging programs.

IV. Conclusion

Hedging is a complex process that can be beneficial for utility customers, but nevertheless presents challenges for both utilities and regulators. Successful hedging is not a one-size-fits-all proposition—what works for one utility in one market may not work for others. Hedging policy requires open communication among all stakeholders to make sure electric utilities use emerging power markets and financial instruments in ways that serve the public interest.

WHEREFORE, Staff submits this report for the Commission's consideration.

Respectfully Submitted,

STAFF OF THE MISSOURI PUBLIC SERVICE COMMISSION

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CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing were served electronically to all counsel of record this 8th day of April, 2013.

/s/ John D. Borgmeyer