

BEFORE THE
CORPORATION COMMISSION OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF)
OKLAHOMA GAS AND ELECTRIC COMPANY)
FOR AN ORDER OF THE COMMISSION)
AUTHORIZING APPLICANT TO MODIFY ITS)
RATES, CHARGES, AND TARIFFS FOR RETAIL)
ELECTRIC SERVICE IN OKLAHOMA)

Cause No. PUD
201700496

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CORPORATION COMMISSION
OF OKLAHOMA

SUMMARY
OF RESPONSIVE TESTIMONY
OF
JOHN G. ATHAS
ON BEHALF OF OKLAHOMA COGENERATION
OWNERS

May 7, 2018

Introduction

John G. Athas, Principal Consultant and Vice President at Daymark Energy Advisors (Daymark), filed Responsive Testimony on behalf of Oklahoma Cogeneration (“OK Cogen”). He is an electric utility industry planning specialist with nearly 40 years of experience in areas including strategic planning, integrated resource planning, generation planning, economic and financial analysis, marketing, wholesale power market analysis and forecasting, electric power retail marketing, and rates and pricing.

This docket is a comprehensive general rate application by OG&E. A component of the costs that are driving OG&E to request an increase in its rates are the costs associated with the modernization of the Mustang Generating Facility, specifically the addition of seven aero derivative combustion turbines that OG&E developed and now owns and operates. Those units were placed into service in 2018. OK Cogen currently provides 125 MW of power to OG&E with a contract that is expiring in August 2019. OK Cogen can provide cost effective capacity well beyond the end of the current PPA. OK Cogen participated in the Mustang Modernization Plan (“MMP”) pre-approval proceeding¹ (“MMP Case”) and responded to an existing capacity Request for Information (“RFI”) conducted by OG&E.² Through those processes and in other communications with the Company, OK Cogen has repeatedly indicated its interest in selling the facility to OG&E to meet OG&E’s identified needs for the Mustang units and other capacity. OK Cogen remains interested selling the facility and believes it can continue to provide cost-effective capacity and energy to ratepayers if OG&E acquires the facility. OK Cogen is concerned that OG&E’s process of developing the MMP

¹ OCC Cause PUD 201400229. In the Matter of the Application of Oklahoma Gas and Electric Company for a Commission Authorization of a Plan to Comply with the Federal Clean Air Act and Cost Recovery; and for Approval of the Mustang Modernization and Cost Recovery.

² Request for Information: Electric Generation Capacity and Purchase Power Agreement Information, issued by OG&E on June 8, 2015, responses due date of July 6, 2015.

did not properly consider market alternatives, including the OK Cogen facility,³ OK Cogen is a market participant that was (and is) interested in offering capacity to OG&E, the MMP process did not provide OK Cogen an opportunity to continue to meet the needs that were indicated by OG&E that it had. We believe OG&E's lack of consideration of market alternatives in the MPP Case did not serve the best interest of its ratepayers. We are concerned, both for our own interest and in the interest of ratepayers, that OG&E consider market options in the future and not repeat the process OG&E used in the MMP Case.

A large portion of O&E cost structure is to provide adequate generation resources and a transmission system that assures the reliable access to OG&E and SPP Market generation resources. The management of the generation resource portfolio, including the acquisition of new generation resources, needs careful attention and oversight as it ultimately determines whether OG&E is providing these resources at the lowest possible costs. The portfolio is made up of various types of generation technology, fuels utilization, and ownership/PPA arrangement. A general rate case is not only an opportunity for the OCC to review the costs of OG&E but also for providing direction to OG&E on what the OCC requires from OG&E in the management of its resource portfolio. My testimony will focus on this latter issue, as OK Cogen's interest is in seeking Commission direction that will assure that OG&E uses proper resource procurement processes in the future.

The purpose of Mr. Athas' testimony is to discuss that alternative resource options existed at the time of OG&E's initiation of the Mustang combustion turbine, a finding the Commission has already reached in Cause No. 201400229.⁴ In addition, alternative market resources still exist. OK Cogen's generation facility, currently under a PPA with OG&E through 2019, is one of those

³ The Commission found that OG&E failed to seek any competitive solicitations to meet future generation needs and failed to provide sufficient evidence regarding reasonable alternatives. Final Order in Cause No. PUD 201400229, issued December 2, 2015, page 18 of 23.

⁴ Cause No. PUD 201400229 Final Order Finding 24 Page 11 of 23

market alternatives since the facility is fully capable of operating many years into the future. Also, Mr. Athas' testimony described concerns with OG&E's failure to consider market alternatives by OG&E in the MMP process. Mr. Athas addressed the qualitative attributes that OG&E asserts as reasons to proceed with the MPP that can and should be quantified to provide the opportunity for ratepayers to be served by the lowest cost or highest valued generation resources.

Mr. Athas' review found that:

1. The need for the specific addition of aero derivative combustion turbines had not been adequately established and is overstated.⁵ Despite this omission, OG&E chose aero derivative combustion turbines without quantification of any benefits.
2. The evaluation of alternatives to the additions of the aero derivative combustions was virtually non-existent. OG&E did not consider in its evaluation that OK Cogen capacity could remain in its portfolio after the expiration of its current PPA. The consideration of other existing SPP-based capacity was cursory, at best. The potential for new non-OG&E developed generation was never considered.
3. OG&E needs to assess generation markets to test the value of generation options with varied attributes, which OG&E only considered in a qualitative manner and did not solicit proposals from any market participants.

Because of these findings, Mr. Athas recommended that an order in this proceeding include requiring OG&E to fully assess the viability of the continued use of the Ok Cogen capacity in its portfolio beyond the current PPA. In addition, Mr. Athas recommended that the Commission direct OG&E to meet its needs for new resources

⁵ See OCC Order 647346 in Cause Number PUD 201400229, page 18.

by seeking all alternatives available from the market.

Description of the OK Cogen Facility

The Oklahoma Cogeneration facility is a 125 MW combined cycle turbine power plant operating in cogeneration mode, providing power output to OG&E in accordance with an existing PPA. The facility was placed into operation in 1989 and has operated as a PURPA qualifying facility selling power to OG&E since it was constructed. The facility is in Oklahoma City, connected to OG&E's 115 kV⁶ transmission system and proximate to OG&E's Mustang site. Oklahoma Cogeneration is under contract through a Power Purchase Agreement with OG&E through August 2019.

In OG&E's 2014 and 2015 IRPs, the Company assumes that Oklahoma Cogeneration will not be part of OG&E's supply portfolio following the expiration of the PPA in 2019.⁷ Additionally in response to Data Request OK Cogen 2-5b, the Company states, "OG&E does not know OK Cogen's plans for the plant beyond the contract expiration." However, OK Cogen can provide cost effective capacity well beyond the end of the current PPA. OK Cogen participated in the MMP Case and the RFI process. Through those processes, OK Cogen indicated its interest in selling the facility to OG&E to meet OG&E's identified needs for the Mustang units and other capacity. OG&E has not responded to additional correspondence from OK Cogen that included specific offers and pricing to sell them the facility so that OG&E would be operating it beyond the PPA. Mr. Athas submitted three exhibits in testimony to document the efforts made by OK Cogen to sell the facility to OG&E at the expiration of the PPA. OG&E has not moved forward to discussions so that they could determine if a price could be agreed upon that would be beneficial to OG&E's ratepayers. OK Cogen remains interested in OG&E's acquisition of the facility, so the OK Cogen can continue to serve OG&E's customers. OK Cogen is concerned that even though the capacity is an existing resource in OG&E's portfolio, the OK Cogen was for some reason unknown to OG&E and not viewed as a resource option and excluded from its plans after the end of the current PPA.

The Oklahoma Cogeneration facility has significant remaining useful life. The owners have represented to Mr. Athas that the unit has been well maintained and they plan for continued operation of the facility well beyond the current PPA. At the request of the owners of OK Cogen, General Electric reviewed the operational history of the units at the site. The results of this review are provided in Exhibit JGA-6. This memo lists recent inspections of major components May 2013 through May 2016. The review recommended other major inspections not being needed until 2031 and as late as 2037. The review did not find any indication that the facility was close to the end of its useful life.

OG&E'S Need for Additional Capacity Resources

OG&E has systematically evaluated the costs and reliability of future operation of four coal steam units at Mustang Station. The four Mustang Units represented 463 MW of net dependable capacity. Based on a study by Black & Veatch⁶, OG&E determined it was not economically feasible to consider the continued operation of these units and thus retired this generation capacity. With the retirement of this capacity, OG&E's planning capacity margin would drop below the required 12% by 2018. Table 17 of the 2014 IRP Update showed that there would be a 289 MW planning capacity margin deficit by 2018 and a 460 MW deficit by 2020.⁹ Beyond the 2014 IRP, OG&E has not produced a need analysis for additional capacity that includes any consideration of location of the generation nor did they produce any separate transmission planning study to demonstrate the need for voltage support under any scenario. The 2020 need would be reduced from 460 MW to 340 MW if Oklahoma Cogeneration remained in the supply portfolio beyond 2019; OG&E has assumed the OK Cogen facility will not remain part of OG&E's portfolio.

⁶ Attachment to Direct Testimony of Lanny Nickell

⁷ See Table 15 on page 38 of 2015 Integrated Resource Plan and Table 17 on page 39 of the 2014 Integrated Resource Plan. Both tables show the Planning Capacity Margin and show a drop of 125 MW in the Purchase Contract row between 2019 and 2020.

⁸ Direct Testimony of George McAuley Page 13 line 28-29 to Page 14 line 2

⁹ 2014 IRP Update, page 39.

To meet its forecasted need, OG&E installed seven, modern natural gas-fired units to replace the 1950s-era power generating units at the former Mustang Power Plant as part of the MMP. The Company completed the construction of these units for a total of 462 MW of new peaking capacity¹⁰ in April 2018. OG&E's 2014 IRP Update did consider three self-build options for new generation facilities:

- 560 MWs of CC capacity in 2018 (with next capacity addition in 2023)
- 400 MWs of CT capacity in 2018 (with 560 MWs of CC in 2020)
- 280 MWs of CT capacity in 2018, 125 MWs of CT in 2019 (with 560 MWs of CC in 2020)

For all options, the new capacity was assumed to be owned and operated by OG&E.¹¹ OG&E's IRP concluded that the best capacity to meet the need resulting from the retirement of the Mustang units and the end of the OK Cogen PPA would be natural gas fueled generation. In addition to the quantitative analysis, OG&E has put forward several qualitative justifications for building CTs rather than the CC. The primary qualitative explanation is that with increased wind capacity in SPP, the quick-start capability of the CTs will yield more market revenues and provide more benefits to customers.¹² The case for specifically moving forward with the aero derivative combustion turbines has never been quantifiably established for their value to OG&E ratepayers. OG&E's IRP analysis did not include options to continue the use of the natural gas fueled OK Cogen in its portfolio.

With respect to OG&E's choice of aero derivative combustion turbines, OG&E witness Burch states "As OG&E evaluated the need to replace the Mustang Capacity in 2014 it recognized [that has not been quantified in a study] that new assets needed to be extremely flexible to maximize

¹⁰ Direct Testimony of Leon Howell ("Howell Direct"), pp. 10-11.

¹¹ 2014 IRP Update, pp. 41-43.

¹² Ibid. at p. 28.

their value to customers in the evolving marketplace. Flexibility was considered to be the ability to start quickly to respond to system needs, ability to start multiple times per day if necessary and ideally be sized in smaller blocks of generation”¹³ OG&E has not quantified the benefits of this attribute. In addition, OG&E shows IRP results that only justify some type of natural gas fueled generation. As stated in OG&E Witness Burch’s Testimony:

- Q. After OG&E concluded that natural gas generation would be the optimal replacement for the capacity need, what types of natural gas generation were evaluated?*
- A. OG&E considered conventional and advanced combined cycle units and traditional and aero derivative simple cycle combustion turbines and those types of generation against the required operational characteristics. Because of that screening, OG&E concluded that aero derivative combustion turbines were the best choice.¹⁴*

It is important to recognize that the choice of combustion turbines is not specifically determined from OG&E’s IRP results. IRP results are the only analysis that numerically quantifies the value of natural gas generation but does not go as far as to specify combustion turbine versus combined cycle and geographic location.

OG&E did not evaluate options for obtaining capacity from OK Cogen or other market alternatives instead of building new capacity. Instead, OG&E dismissed the pursuit of market options. The 2014 IRP Update states that “OG&E also determined that no CT’s are available for acquisition in the region.”¹⁵ OG&E confirmed in response to discovery that it had not conducted any competitive solicitations for alternatives to the Mustang CTs.¹⁶

¹³ Burch Direct Testimony Page 16 Lines 17-22

¹⁴ Ibid Page 19 lined 5 -12

¹⁵ Ibid.

¹⁶ See OG&E’s response to OK Cogen 3-6.

OG&E did not provide any SPP assessment of the need for quick starts prior to OG&E's commitment to construct the aero derivative combustion turbines at the Mustang site. SPP looked at quick start capacity after OG&E had committed to the installation of the aero derivation combustion turbines as part of MMP. The January 5, 2017 SPP¹⁷ report only addresses whether quick start generation would have benefits to the operation of the system. No one would dispute that the system operators would view it positive to have additional flexible generation. The report has not stated that there is a deficiency in quick start generation within SPP that causes operational concerns. The report has not quantified a monetary value to OG&E ratepayers for quick start versus conventional generation.

Evaluating Generation Market Alternatives

The acquisition of new resources is not the singular focus of integrated resource planning. Integrated resource planning is a key component of the analysis and decision process utilized to manage a generation resource portfolio. Properly done, this includes the continued evaluation of existing resources to derive their place in the least cost portfolio going forward. IRP should include looking into environmental and reliability constraints and considerations for the existing resources as well as new resources. IRP should investigate the different forms of resource financial structure; ownership, joint ownership and power purchase, as examples.

OG&E only partially evaluated the existing resources in its IRP prior to proceeding down the path to add the new combustion turbines at Mustang. Specifically, OG&E looked at the existing resources it owned. They evaluated the costs of maintaining their old natural gas fueled capacity at Mustang given the environmental requirements and decided that retirement was the correct economic decision. OG&E appears to look at the existing resources that OG&E owns and operates differently than existing generation resources they have through power purchase agreements

¹⁷ Exhibit LN-1 Direct Testimony of Lanny Nickell

(PPAs). A prime example of this is that OG&E in their IRP and resource plans assumes the expiration of a PPA with the 125 MW OK Cogen facility means that the facility just goes away. This assumption means that IRP will focus on replacing the OK Cogen capacity without evaluating its continued operation within the OG&E portfolio. OG&E stated it was not aware of OK Cogen plans after the PPA expiration.¹⁸ As Mr. Athas discussed earlier, this statement does not recognize the dialogue OK Cogen initiated to attempt to sell the facility to OG&E, documented in exhibits JGA-3, 4 and 5. The term of PPAs, whether they are for thermal generating capacity or renewable generating capacity, are not designed to capture the entire physical nor economic lives of the asset. The PPA term is a result of the specific nexus of utility needs and benefits with the term of the contract necessary to assure that financing can be obtained. As Mr. Athas discussed earlier Ok Cogen owners had tried to engage OG&E in discussions to sell the generation facility to OG&E.

When planning optimization models are utilized within the IRP, continued operation versus retirements of existing resources are evaluated on a going forward cost basis. This gives an indication as to whether retirement of existing owned resources, or possibly of the continued use of PPA resources, should be more seriously considered. This constant evaluation of the existing resources precedes establishing a need to seek options to retire each individual generating resource.

OG&E and any utility should be studying options for the continued operation of a PPA resource, as well. There are three outcomes from such analysis: 1) the age and technology of a PPA resource make it economically unlikely for the resource to continue to be part of the OG&E portfolio; 2) the remaining life of the PPA resource, and its underlying technology, allow consideration of acquisition of that resource at a favorable price; or 3) a negotiation of a PPA extension can best serve the OG&E portfolio. With a not yet 30 year-old resource, acquisition at a favorable price may provide the least cost way to manage a resource's role within the OG&E portfolio. It is not uncommon for generation plant to have lives well beyond the period of the Ok Cogen PPA. Just as

¹⁸ OG&E Response to Data Request Ok Cogen 2-5b

continued operation of most of the OG&E generation fleet is part of the least cost portfolio going forward, the continued use of resources currently under PPA could also have future roles in OG&E's portfolio designed to serve customers in a least cost and reliable way. Retirement of OG&E owned, or contracted resources may trigger the need for replacement capacity to be acquired through seeking and evaluating all alternative resources available in the market.

OG&E has not tried to fill its need for capacity associated with the Mustang retirements by finding other resources available in the SPP market. OG&E witness Burch describes in his direct testimony the methods OG&E considered for obtaining aero derivative CTs. "OG&E Resource Planning Group was unaware of any quick start aero derivative CTs for sale or for contract in the market in the 2014 timeframe. Given that no CTs were available and the benefits from re-using the Mustang site... OG&E concluded that a self-build option at Mustang was in the best interest of its customers."¹⁹ These statements are very telling and indicated to Mr. Athas that OG&E was considering capacity at other sites in SPP versus re-using the Mustang site. OG&E is essentially recognizing that there are trade-offs when comparing generating capacity. A formal competitive bidding process could have provided true options, perhaps with different attributes.

OG&E has provided no explanation of its reasons for not accessing the market to fill its need for capacity associated with the Mustang retirements. It has not provided any analysis demonstrating any benefits of building 400 MWs of CTs over, for example, building 280 MW of CTs and acquiring 125 MW of the existing CC capacity from Oklahoma Cogeneration or any other combination of OG&E build and market alternatives. Further, it offers no studies that show that the Mustang site is the only site that can address the identified need. The only information offered by OG&E is some explanation for why it is specifically targeting CTs over CCs,²⁰

¹⁹ Direct testimony of Robert J. Burch Page 20 of 33 Line 26 through Page 21 of 33 Line 1.

²⁰ Direct Testimony of Leon Howell 2014 IRP Update, p. 28.

Mr. Athas' conclusions on the potential for alternative resources being available to fill OG&E's need for capacity associated with the Mustang retirements is that OG&E did not seek market alternatives and, as a result, it did not consider lower cost options, such as an acquisition of the OK Cogen facility. OG&E's customers would have been better served if OG&E had searched the market for options before securing the CTs as the replacement capacity for the Mustang retirements. Other Oklahoma utilities taken a different approach to addressing capacity needs. OG&E's dismissal of the market differs from the approach that Public Service Company of Oklahoma (PSO) has taken. In planning for the 2016 retirement of the Northeastern coal plant, PSO determined that a PPA with an existing resource would provide the most feasible and economical solution to a capacity shortage.²¹ In April 2012, PSO issued an RFP for up to 260 MW of long-term market capacity as part of its coal retirement plans.²² After receiving multiple responses, PSO contracted with Calpine for a 15-year PPA for 260 MW of the Oneta unit.²³

Further, Mr. Athas stated that in his work with the Arkansas General Staff he has been involved in dockets reviewing the acquisition of natural gas combined cycles, Entergy Arkansas, Inc. and Arkansas Electric Energy Cooperative. In fact, in each of these cases they determined that the lowest cost option was existing combined cycles being sold, rather than new capacity being developed.

By ignoring a willing seller of a power plant that is less than 30 years old OG&E likely increased costs for its ratepayers. OG&E has not responded to the owners of Ok Cogen's offer to sell the facility to OG&E and thus did not investigate whether the OK Cogen facility should remain part of the OG&E resource portfolio beyond its current PPA.

²¹ Direct Testimony of Steven Fate (PSO), p. 26. September 26, 2012. OCC Cause No. PUD 201200054.

²² PSO 2012 Integrated Resource Plan. <http://occeweb.com/pu/PSO%202012%20IRP.pdf>

²³ Direct Testimony of Steven Fate (PSO), pp. 26-30. September 26, 2012. OCC Cause No. PUD 201200054.

Conclusion and Recommendations

Based on his review, Mr. Athas concluded:

1. The need for the specific addition of aero derivative combustion turbines had not been adequately established and is overstated.²⁴ Despite this omission, OG&E chose aero derivative combustion turbines without quantification of any benefits.
2. The evaluation of alternatives to the additions of the aero derivative combustions was virtually non-existent. OG&E did not consider in its evaluation that OK Cogen capacity could remain in its portfolio after the expiration of its current PPA. The consideration of other existing SPP-based capacity was cursory, at best. The potential for new non-OG&E developed generation was never considered.
3. OG&E needs to assess generation markets to test the value of generation options with varied attributes, which OG&E only considered in a qualitative manner and did not solicit proposals from any market participants.

Because of the findings above, Mr. Athas would recommend that an order in this proceeding include requiring OG&E to fully assess the viability of the continued use of the Ok Cogen capacity in its portfolio beyond the current PPA. In addition, Mr. Athas recommends that the Commission direct OG&E to meet its needs for new resources by seeking all alternatives available from the market.

²⁴ See OCC Order 647346 in Cause Number PUD 201400229, page 18.

CERTIFICATE OF SERVICE

This is to certify that on the 7th day of April, 2018, a true and correct copy of the above and foregoing OK Cogen's Testimony Summary of John G. Athas was e-mailed, addressed to the following:

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