

**BEFORE THE CORPORATION COMMISSION OF THE STATE 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 ) CAUSE NO. PUD 201800140  
RATES, CHARGES, AND TARIFFS FOR RETAIL )  
ELECTRIC SERVICE IN OKLAHOMA )

Direct Testimony

of

Usha-Maria Turner

on behalf of

Oklahoma Gas and Electric Company

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Usha-Maria Turner  
*Direct Testimony*

1    **Q.     Please state your name, your employer, position and business address.**

2    A.     My name is Usha-Maria Turner. I am the Director of Environmental Affairs and Federal  
3           Public Policy for Oklahoma Gas and Electric Company (“OG&E” or “Company”). My  
4           business address is 321 N. Harvey, Oklahoma City, Oklahoma 73102.

6    **Q.     Please discuss your professional background.**

7    A.     I received a Bachelor of Science in Engineering in 1997 and a Master of Science in  
8           Engineering in 1999, both from Texas A&M University. In 1999, I began my professional  
9           career with Texas Utilities in Dallas, Texas, supporting environmental regulatory  
10          compliance for the company’s 23,000 megawatts (“MW”) of generation facilities. Between  
11          2001 and 2012, I held various positions of increasing responsibility in the areas of  
12          environmental policy and advocacy; reviewing emerging environmental regulation and  
13          legislation and advocating the company’s position with legislators and regulators. I also  
14          supported the company’s operations and legal departments on pending environmental  
15          regulatory matters. I began my current position with OG&E in November, 2012.

17   **Q.     What are your responsibilities as Director of Environmental Affairs and Federal  
18           Public Policy?**

19   A.     I oversee a group that monitors and analyzes state and federal environmental legislation and  
20          regulation to assess the potential impacts to the Company’s operations. My department  
21          represents the Company’s environmental position externally with trade associations and  
22          state and federal agencies. In addition, I oversee certain special projects that relate to  
23          environmental issues, including advising on key permitting activities related to the  
24          Company’s generation assets and interfacing with state and federal regulating entities.

1 Q. **Have you previously testified before this Commission?**

2 A. Yes. I was a witness in Cause No. PUD 201400229; the application of OG&E for  
3 authorization of a plan to comply with the then recently finalized federal regional haze  
4 requirements and Mercury and Air Toxics Standards (“MATS”).  
5

6 Q. **What is the purpose of your testimony?**

7 A. My testimony will discuss the existing federal Regional Haze Rule (“Regional Haze” or  
8 “RHR”) and what the compliance plan is for that rule. I will also discuss some other  
9 potential environmental regulations and requirements that could impact OG&E.  
10

11 **Introduction**

12 Q. **Please provide an overview of OG&E’s environmental compliance obligations and the**  
13 **importance of those obligations.**

14 A. The activities of OG&E are subject to numerous federal and state laws and regulations  
15 governing environmental protection relating to air quality, water quality, waste  
16 management, wildlife conservation and natural resources. Complying with these laws and  
17 regulations has the potential to impact OG&E’s business activities in many ways, such as  
18 requiring changes in operations and/or the installation and operation of pollution control  
19 equipment. Failure to comply with these laws and regulations generally, could result in the  
20 assessment of administrative, civil and criminal penalties, the imposition of remedial  
21 requirements and the issuance of orders enjoining future plant or unit operations.<sup>1</sup> The  
22 Federal Clean Air Act (“CAA”) provides for civil penalties that range from \$46,192 to  
23 \$369,532 per day<sup>2</sup> per violation. As I will discuss below, the specific federal environmental  
24 regulations that OG&E must comply with have strict deadlines for compliance, as  
25 established by statute.<sup>3</sup> OG&E’s units are required to operate in compliance with the  
26 established limits, terms and conditions of the applicable rules, once the regulatory  
27 deadlines take effect.

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<sup>1</sup> There are several citations which are program specific in addition to general enforcement authorities. 42 U.S. Code § 7413 contains provisions for Clean Air Act enforcement.

<sup>2</sup> 83 Fed. Reg 1190 (Jan. 10, 2018).

<sup>3</sup> 42 U.S. Code § 7491 and § 7492.

1    **Q.     What are the environmental regulations specifically addressed in this filing?**

2    A.     As stated above, the existing environmental regulation that currently necessitates the  
3           installation of emissions control equipment at some of OG&E's generating facilities is the  
4           2005 Regional Haze rule.<sup>4</sup> This regulation required the Company to meet new emission  
5           limits for sulfur dioxide ("SO<sub>2</sub>") and nitrogen oxides ("NO<sub>x</sub>"), and affects OG&E's  
6           generating units at its Muskogee, Sooner and Seminole facilities, among others.<sup>5</sup>

7  
8    **Q.     Please describe the Company's environmental compliance plan.**

9    A.     To comply with the Oklahoma Regional Haze State Implementation Plan ("SIP"),<sup>6</sup> the  
10          Company installed low NO<sub>x</sub> burners ("LNB") and over-fired air systems ("OFA") as  
11          required by the SIP, on all the affected units: Seminole Units 1, 2, and 3, Muskogee Units 4  
12          and 5, and Sooner Units 1 and 2.<sup>7</sup> To meet the requirements of the Environmental Protection  
13          Agency ("EPA") Federal Implementation Plan ("FIP") relating to SO<sub>2</sub> emission limits,<sup>8</sup> the  
14          Company has installed Dry, Flue Gas Desulfurization systems (commonly called dry  
15          "scrubbers") along with baghouse/fabric filter technology, on Sooner Units 1 and 2 as  
16          required by the FIP. While installing that same technology at Muskogee Units 4 and 5  
17          would meet the FIP's SO<sub>2</sub> emission limits, OG&E will convert the boilers at Muskogee  
18          Units 4 and 5 from utilizing low sulfur coal to utilizing natural gas exclusively and will meet  
19          the SO<sub>2</sub> limits by ceasing the combustion of sulfur-containing coal at these two units. This  
20          option is also allowed under the FIP.<sup>9</sup>

21  
22   **Q.     What are the environmental benefits of this environmental compliance plan?**

23   A.     This plan significantly reduces the emissions of key pollutants from the OG&E units. To  
24          date, LNBs have reduced the NO<sub>x</sub> emission rates from the four coal units by over 60

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<sup>4</sup> 70 Fed Reg 39,104 (July 6, 2005).

<sup>5</sup> Fed. Reg. 81,728 (Dec. 28, 2011).

<sup>6</sup> *Id.*

<sup>7</sup> *Id.* at 81,729.

<sup>8</sup> *Id.* at 81,730-31.

<sup>9</sup> *Id.* at 81,748.

1 percent<sup>10</sup> and scrubbers at Sooner will reduce the company's SO<sub>2</sub> emission rates by about  
2 90 percent.<sup>11</sup> Additionally, the gas conversion at the Muskogee units will practically  
3 eliminate SO<sub>2</sub> from those two units. In addition, since the carbon dioxide ("CO<sub>2</sub>") emissions  
4 rate for natural gas is roughly half the CO<sub>2</sub> emissions rate for coal,<sup>12</sup> the conversion will  
5 reduce OG&E's overall CO<sub>2</sub> emissions. The conversion to gas will also lessen the ash  
6 handling, management and disposal needed for Muskogee as two of the three units will no  
7 longer utilize coal.

### 8 9 **Overview of the Regional Haze Rules**

10 **Q. Please discuss the origin and history of the Regional Haze Rule.**

11 **A.** In the CAA,<sup>13</sup> Congress created a program for protecting visibility in certain parks and  
12 wilderness areas (Class I areas).<sup>14</sup> Section 169A and 169B of the CAA establishes as a goal,  
13 the "prevention of any future, and the remedying of any existing, impairment of visibility  
14 in mandatory Class I federal areas which impairment results from manmade air pollution."  
15 Section 169 requires EPA to issue rules for States to use in determining the Best Available  
16 Retrofit Technology ("BART") to control emissions from certain sources that cause or  
17 contribute to visibility impairment (as measured in deciviews) in these 156 protected  
18 areas.<sup>15</sup> In 1999, EPA promulgated the original RHR,<sup>16</sup> which was later revised in 2005.<sup>17</sup>

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<sup>10</sup> As determined by the actual emissions rate of 2017 compared to 2012, prior to the installation of Low NO<sub>x</sub> burners.

<sup>11</sup> As determined by the change in permitted SO<sub>2</sub> emissions from 2012, to the new FIP emissions limits, indicated in the construction permit received from the ODEQ prior to installing the scrubbers.

<sup>12</sup> Available at [https://www.ecfr.gov/cgi-bin/text-idx?SID=bc05edbe8a30addff2090318562080e6&mc=true&node=ap40.23.98\\_138.1&rgn=div9](https://www.ecfr.gov/cgi-bin/text-idx?SID=bc05edbe8a30addff2090318562080e6&mc=true&node=ap40.23.98_138.1&rgn=div9).

<sup>13</sup> 42 U.S. Code Chapter 85.

<sup>14</sup> Id at §§ 7491-7492.

<sup>15</sup> 42 U.S. Code § 7491.

<sup>16</sup> 64 Fed Reg 35,714 (July 1, 1999)

<sup>17</sup> 70 Fed Reg 39,104 (July 6, 2005)

1 Q. **What does the Regional Haze Rule require and how did the State of Oklahoma propose**  
2 **to comply?**

3 A. The RHR requires States to submit their BART determinations as State Implementation  
4 Plans or “SIP” revisions to EPA for approval.<sup>18</sup> Oklahoma submitted its Regional Haze SIP  
5 to EPA on February 17, 2010 (“Oklahoma SIP”).<sup>19</sup> After balancing the five, statutory  
6 factors,<sup>20</sup> Oklahoma determined that BART for NO<sub>x</sub> emissions from the seven OG&E  
7 Regional Haze-applicable units was to install LNB to achieve a rate of 0.15 lbs/mmBtu on  
8 a rolling, 30-operating day basis at the affected coal units and separate specific NO<sub>x</sub>  
9 emission rates for each of the three Seminole units.<sup>21</sup> Oklahoma also determined that BART  
10 for SO<sub>2</sub> emissions from the four coal-fired, Regional Haze applicable units operated by  
11 OG&E resulted in an annual, rolling average emission rate of 0.55 lbs/mmBtu and a 30-day  
12 rolling average emission rate 0.65 lbs/mmBtu consistent with the use of low sulfur coal.  
13 The Oklahoma SIP also concluded that the installation of four scrubbers would not be cost  
14 effective for the OG&E units.<sup>22</sup>

15  
16 Q. **Was the Oklahoma SIP approved by the EPA?**

17 A. Oklahoma submitted its regional haze determinations to EPA, which proposed on March  
18 22, 2011, to approve the NO<sub>x</sub> and PM determinations but disapprove the SO<sub>2</sub>  
19 determinations and issue a FIP instead.<sup>23</sup> At the end of the public comment period for the  
20 proposed rule, on May 23, 2011, the Oklahoma Attorney General, OG&E, Oklahoma  
21 Industrial Energy Consumers (“OIEC”) and others separately submitted comments to EPA

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<sup>18</sup> 42 U.S. Code § 7491

<sup>19</sup> Available at [www.regulations.gov](http://www.regulations.gov); Doc. ID No. EPA-R06-OAR-2010-0190-0002 or at [http://www.deq.state.ok.us/AQDnew/RulesAndPlanning/Regional\\_Haze/SIP/index.htm](http://www.deq.state.ok.us/AQDnew/RulesAndPlanning/Regional_Haze/SIP/index.htm)

<sup>20</sup> 42 U.S. Code § 7491: The five BART factors are: (i) the costs of compliance; (ii) the energy and non-air quality environmental impacts of compliance; (iii) any existing pollution control technology in use at the source; (iv) the remaining useful life of the source; and (v) the degree of improvement in visibility that may be expected as a result of such technology.

<sup>21</sup> 76 Fed. Reg. 16,168, 16,180-81 (March 22, 2011).

<sup>22</sup> *Id.* at 16,182-87. The Oklahoma SIP also contained BART determinations related to PM emissions at OG&E’s Sooner Units 1 and 2 and Muskogee Units 4 and 5. Those BART determinations concluded that OG&E should continue to use the existing electrostatic precipitators at those units to control PM emissions to the levels contained in the SIP. Such a BART determination was approved by the EPA. *Id.* at 16,180-81.

<sup>23</sup> *Id.*

opposing its proposed action and urging full approval of the SIP proposed by Oklahoma.<sup>24</sup> On December 28, 2011, EPA published a final rule in the Federal Register to approve in part and disapprove in part the submitted Oklahoma SIP.<sup>25</sup> In this rule, EPA approved the plan for meeting NO<sub>x</sub> emission limits with the installation of LNB technology, but the EPA rejected the State's BART determination for SO<sub>2</sub>. EPA simultaneously finalized its FIP for these units in Oklahoma and imposed a rolling, 30-day SO<sub>2</sub> emission limit of 0.06 lbs/mmBtu or about 90 percent lower than the SO<sub>2</sub> limit approved by the State. The emissions limits as laid out in this FIP would require the installation of scrubbers or the cessation of coal combustion at each of OG&E's four affected units.

**Q. Did OG&E seek rehearing or judicial review of the EPA's Regional Haze FIP?**

A. Yes. On February 24, 2012, OG&E filed Requests for Reconsideration with EPA and filed Petitions for Review and Stay with the 10<sup>th</sup> Circuit Court of Appeals,<sup>26</sup> challenging EPA's partial disapproval of the Oklahoma SIP and simultaneous promulgation of the FIP. The State of Oklahoma and the OIEC also submitted a petition with the 10<sup>th</sup> Circuit.<sup>27</sup> On June 22, 2012, two judges from the 10<sup>th</sup> Circuit issued the requested stay<sup>28</sup> of the EPA FIP pending OG&E and the State of Oklahoma's appeal of the EPA FIP. This "stay" effectively stopped the clock on the statutory compliance deadline of five years<sup>29</sup> from the FIP's effective date of January 27, 2012.<sup>30</sup>

**Q. What was the outcome of the appeal of the FIP?**

A. On July 19, 2013, the 10<sup>th</sup> Circuit Court of Appeals issued an opinion denying the Petition for Review and affirmed the EPA's issuance of the FIP.<sup>31</sup> A request for *en banc* rehearing

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<sup>24</sup> Available at regulations.gov; docket ID EPA-R06-OAR-2010-0190

<sup>25</sup> 76 Fed. Reg. 81,728 (Dec. 28, 2011)

<sup>26</sup> Case No. 12-9527 (10<sup>th</sup> Cir.).

<sup>27</sup> Case No. 12-9526 (10<sup>th</sup> Cir.)

<sup>28</sup> Order, Case No. 12-9526 (10<sup>th</sup> Cir.)

<sup>29</sup> 76 Fed. Reg. at 81,729 and 81,731.

<sup>30</sup> January 27, 2017 was five years after the effective date the final rule was published in the Federal Register (*Id.* at 81,728). This then became the SIP compliance date for NO<sub>x</sub> as the SO<sub>2</sub> requirements in the FIP were subject to the stay.

<sup>31</sup> *Oklahoma v. EPA*, 723 F.3d 1201 (10th Cir. 2013)

1 was denied on October 21, 2013.<sup>32</sup> On January 29, 2014,<sup>33</sup> OG&E, the State of Oklahoma  
2 and the OIEC filed a petition for a *Writ of Certiorari* at the U.S. Supreme Court which was  
3 denied on May 27, 2014.<sup>34</sup> An order lifting the previously imposed stay of the EPA FIP was  
4 entered on May 30, 2014,<sup>35</sup> triggering the balance of the Regional Haze compliance timeline  
5 of 55 months.  
6

7 **Q. What compliance options has OG&E reviewed for meeting the EPA FIP mandated**  
8 **SO<sub>2</sub> emission rate?**

9 A. OG&E conducted a review of the various control technology options that could possibly  
10 achieve compliance with the EPA FIP SO<sub>2</sub> emission rate. OG&E evaluated the pre-  
11 combustion technological control options of coal switching, coal washing, and coal  
12 processing for reducing SO<sub>2</sub>. The company also evaluated post-combustion technologies  
13 including various kinds of Dry Flue Gas Desulfurization (“FGD”) or (“Dry Scrubbing”) and  
14 Wet FGD or (“Wet Scrubbing”). OG&E also evaluated and tested Dry Sorbent Injection  
15 (“DSI”) technology to evaluate whether that technology could meet the FIP SO<sub>2</sub> emission  
16 rate. After testing, OG&E concluded that the option of using DSI (as a much less expensive  
17 technology than scrubbers) was not possible for meeting the FIP SO<sub>2</sub> limits. OG&E also  
18 evaluated converting the coal units to natural gas. OG&E Witness Burch addresses these  
19 technological options and how OG&E decided on its chosen technology.  
20

### 21 **Overview of Potential Environmental Regulations**

22 **Q. Are there other potential environmental regulations that could impact coal**  
23 **generation?**

24 A. Yes. There are always emerging rules, proposed or under development, that could impact  
25 OG&E’s coal generation as well as the other sources. OG&E’s plan to convert two of its  
26 existing coal units to natural gas and to install scrubbers on the units at Sooner not only

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<sup>32</sup> Order, Case No. 12-9526 (10<sup>th</sup> Cir.).

<sup>33</sup> Letter from Supreme Court Clerk, Feb. 3, 2014 (10<sup>th</sup> Cir., Case No. 12-9526, Document: 01019197135, Feb. 4, 2014)

<sup>34</sup> Case No. 13-921 (U.S.)

<sup>35</sup> Order, Case No. 12-9526 (10<sup>th</sup> Cir.)



1 meets the current requirements of Regional Haze rules but also better positions the Company  
2 toward mitigating potential future risks for coal generation.  
3

4 **Q. What are some of the other potential rules whose requirements could be mitigated by**  
5 **OG&E's environmental compliance plan?**

6 A. On September 30, 2015, the EPA issued a final rule<sup>36</sup> addressing the effluent limitation  
7 guidelines ("ELG") for power plants under the Federal Clean Water Act, a rule which  
8 includes requirements related to the process of managing ash from coal combustion, Also  
9 in 2015, the EPA finalized a new rule<sup>37</sup> under the Federal Resource Conservation and  
10 Recovery Act ("RCRA") for the handling and disposal of coal combustion residuals or coal  
11 ash. Neither of these rules will apply to the two Muskogee units converted to gas because  
12 the conversion will eliminate the creation of ash in the combustion process.

13 Additionally, On August 31, 2018, the EPA published the Affordable Clean Energy  
14 ("ACE") rule,<sup>38</sup> a proposed regulation to reduce greenhouse gas ("GHG") emissions from  
15 existing coal-fueled electric generating units. The final form, ultimate timing, and impact of  
16 these standards cannot be determined with certainty at this time, however the conversion of  
17 the two Muskogee units to gas will result in an approximately 40% reduction in overall  
18 GHG emissions from the Company and could potentially assist in complying with a future  
19 GHG requirements.

20 Furthermore, the installation of scrubbers at Sooner and the conversion to natural  
21 gas firing at Muskogee should mitigate the need for additional costly SO<sub>2</sub> emission control  
22 equipment in the future for compliance with future revisions to the RHR and SO<sub>2</sub> National  
23 Ambient Air Quality Standard ("NAAQS").

24 Both coal facilities and the Seminole facility are subject to the Cross State Air  
25 Pollution Rule ("CSAPR"), a rule which controls seasonal NO<sub>x</sub> emissions. The conversion  
26 of the Muskogee units is important to the ability of OG&E to be in compliance with the  
27 2016 CSAPR.<sup>39</sup>

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<sup>36</sup> 80 Fed. Reg. 67,837 (September 30, 2015)

<sup>37</sup> 80 Fed. Reg. 21,301 (April 17, 2015)

<sup>38</sup> 83 Fed. Reg. 44,756 (August 31, 2018)

<sup>39</sup> 81 Fed. Reg. 74,502 (October 26, 2016)

**Conclusion**

Q. **Does the environmental compliance plan allow OG&E to comply with the Regional Haze Rule?**

A. Yes. OG&E has identified a compliance plan that meets those requirements, has already demonstrated compliance with the SIP requirements and is well under way towards meeting the FIP compliance dates and targets.

Q. **Does the environmental compliance plan better position OG&E to comply with potential environmental requirements?**

A. Yes. The Company's decision to scrub two coal units and convert two coal units complies with current regulatory requirements of RHR and also better positions the Company for potential additional environmental requirements.

Q. **Does this conclude your testimony?**

A. Yes, it does.