

BEFORE THE CORPORATION COMMISSION  
OF THE STATE OF OKLAHOMA

1 APPLICATION OF OKLAHOMA GAS AND )  
2 ELECTRIC COMPANY FOR AN ORDER OF )  
3 THE COMMISSION AUTHORIZING ) CASE NO. PUD 2023-000087  
4 APPLICANT TO MODIFY ITS RATES, )  
5 CHARGES, AND TARIFFS FOR RETAIL )  
6 ELECTRIC SERVICE IN OKLAHOMA )  
7  
8

9 REDACTED VERSION OF DIRECT TESTIMONY

10 OF

11 SCOTT NORWOOD

12 ON BEHALF OF

13 OKLAHOMA INDUSTRIAL ENERGY CONSUMERS  
14

15 REVENUE REQUIREMENT PHASE  
16  
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19 APRIL 26, 2024  
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**OCC CASE NO. PUD 2023-000087**  
**REDACTED DIRECT TESTIMONY OF SCOTT NORWOOD**  
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28

1 **I. INTRODUCTION**

2

3 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

4 A. My name is Scott Norwood. I am President of Norwood Energy Consulting, L.L.C. My  
5 business address is P.O. Box 30197, Austin, Texas 78755-3197.

6

7 **Q. WHAT IS YOUR OCCUPATION?**

8 A. I am an energy consultant specializing in the areas of electric utility regulation, resource  
9 planning and energy procurement.

10

11 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**  
12 **PROFESSIONAL EXPERIENCE.**

13 A. I have over 40 years of experience in the electric utility industry as a utility engineer,  
14 public utility commission staff member, and regulatory consultant to municipal and  
15 cooperative utilities, industrial groups and other organizations that represent electric  
16 consumer interests. Since January of 2004 I have served as President and sole proprietor  
17 of Norwood Energy Consulting, LLC. In this capacity, I have provided electric utility  
18 regulatory consulting services to electric consumer and governmental organizations,  
19 including representation of Attorney General offices in Arkansas, Florida, Iowa,  
20 Oklahoma and Virginia. My consulting practice has been focused primarily on the areas  
21 of electric resource planning, power supply system dispatch and operations, transmission  
22 planning analyses, and evaluations of electric utility fuel supply and purchased power  
23 issues. Before founding Norwood Energy Consulting, I was employed for 18 years as a

1 Principal and Director of the Deregulation Services Department of GDS Associates, Inc.,  
2 a regulatory and power supply consulting firm. From 1984 to 1986 I was employed as  
3 Manager of Power Plant Engineering for the Staff of the Public Utility Commission of  
4 Texas, where I was responsible for analyzing and presenting testimony addressing  
5 resource planning, fuel and purchased power cost issues arising from electric utility  
6 regulatory filings with the Commission. From 1980 to 1984 I was employed by Austin  
7 Energy as a Power Plant Engineer, in which capacity I directed electrical maintenance  
8 and design projects at three gas-fired power plants. I received my Bachelor of Science  
9 degree in electrical engineering from the University of Texas in December of 1980.<sup>1</sup>  
10

11 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?**

12 A. I am testifying on behalf of Oklahoma Industrial Energy Consumers (“OIEC”).  
13

14 **Q. WHAT IS OIEC'S INTEREST IN THIS CASE?**

15 A. OIEC's members are large users of electricity on OG&E's system, and therefore are very  
16 sensitive to any electric rate increases proposed by OG&E. OIEC's interest in this case  
17 is to ensure that the level of costs OG&E is authorized to recover from customers  
18 through rates, as well as the terms and structure of its rates for electric service, are just  
19 and reasonable.

20 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE OKLAHOMA**  
21 **CORPORATION COMMISSION?**

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<sup>1</sup> See Exhibit SN-1 for a more detailed summary of my background and experience.

1 A. Yes. I have testified on behalf of OIEC in numerous past base rate, fuel prudence, and  
2 resource pre-approval proceedings before the Oklahoma Corporation Commission  
3 (“OCC” or “Commission”). I provided direct testimony in Oklahoma Gas and Electric  
4 Company (“OG&E”) base rate cases that were filed in 2005, 2008, 20105, 2017, 2018  
5 and 2021.<sup>2</sup> I also filed testimony in cases involving OG&E requests for approval of: 1)  
6 the Woodward to Oklahoma City 345 kV transmission line; (PUD 200800148); 2) the  
7 OU Spirit and Crossroads wind generation projects (PUD 200900167 and PUD  
8 201000037); 3) OG&E fuel and purchased power expenses (PUD 200700364 and PUD  
9 201000175); 4) the Company’s Southwest Power Pool Transmission Cost Rider  
10 (“SPPTC Rider”) (PUD 201000146); OG&E’s environmental compliance plan for the  
11 Sooner and Muskogee coal units (PUD 201400229); and 5) a recent case involving the  
12 addition of new combustion turbine units at the Horseshoe Lake generating station (PUD  
13 2023000038). I have also filed testimony on behalf of OIEC in numerous past  
14 regulatory proceedings before the OCC involving Public Service Company of Oklahoma  
15 (“PSO”) applications for approval of base rate, fuel, and resource planning and  
16 procurement matters. Through my participation in these past projects I have become  
17 familiar with OG&E’s planning, operations and fuel procurement practices and other  
18 issues under review in this case.

19

20 **Q. HAVE YOU FILED TESTIMONY IN OTHER JURISDICTIONS?**

21 A. Yes. Over the last 20 years I have filed testimony in over 200 utility regulatory  
22 proceedings before state regulatory commissions in Alaska, Arkansas, Florida, Georgia,

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2 See Exhibit SN-1 for additional details on my background and experience along with a listing of my testimony

1 Illinois, Iowa, Kentucky, Louisiana, Michigan, Missouri, New Jersey, Ohio, Oklahoma,  
2 Texas, Virginia, Washington, and Wisconsin.<sup>3</sup>

3

4 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

5 A. The purpose of my testimony is to present my findings and recommendations regarding  
6 certain issues that impact OG&E's proposed cost of service including:

7 1) the Company's proposed \$24 million proforma increase in distribution  
8 vegetation management expense;

9 3) the abnormally high level of OG&E's requested coal inventory;

10 4) the high cost and minimal benefits of OG&E's Grid Enhancement Plan  
11 ("GEP") project; and

12 5) the declining energy production levels and high operating costs of OG&E's  
13 Sooner and Muskogee coal-fired generating units.

14 **Q. HAVE YOU PREPARED ANY EXHIBITS TO SUPPORT YOUR TESTIMONY?**

15 A. Yes. I have prepared 17 exhibits that are attached to my testimony.

16

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in Oklahoma and other jurisdictions over the last ten years.

3 See Exhibit SN-1.

1 **II. SUMMARY OF TESTIMONY**

2  
3 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS BASED ON YOUR**  
4 **REVIEW OF OG&E'S RATE INCREASE APPLICATION.**

5 A. My major recommendations to the Commission are:

6  
7 1) Distribution Vegetation Management Expense - I recommend that the  
8 Commission deny OG&E's requested pro forma \$24 million (89%) increase to  
9 distribution vegetation management expense because the requested increase is  
10 not reasonable or necessary, not cost-justified, and not beneficial to ratepayers.  
11 OG&E's distribution system reliability has averaged 99.973% over the last ten  
12 years with very few customer complaints at the existing approved \$26 million per  
13 year level of distribution vegetation management spending. Moreover, over the  
14 last four years, OG&E's vegetation-related outages have averaged only 27  
15 minutes per year, which represents less than 20% of total distribution outage time  
16 and only approximately 0.005% of total annual minutes. In fact, the Company  
17 indicates that it does not project any improvement to distribution system  
18 reliability as a result of its proposal to increase distribution vegetation  
19 management spending by \$24 million per year.

20  
21 2) Coal Inventory - I recommend that OG&E's requested coal inventory level of  
22 \$123 million be reduced by \$76 million (Total Company) to reflect the excessive  
23 volume of inventory that has accumulated as a result of the declining level of

1 energy production from OG&E's coal plants over the last several years. The  
2 requested inventory of 2.52 million tons is 2.6 times the inventory level approved  
3 by the Commission in OG&E's most recent base case and equates to 118 days of  
4 inventory based on the average coal burn rate of OG&E's units over the last three  
5 years. My recommended inventory level of \$47 million is more than 50% higher  
6 than the amount allowed in OG&E's last rate case and is based on an inventory  
7 level of 962,406 tons, which would provide 43 days of operations at the  
8 maximum monthly coal burn rate over the last three years of 22,382 tons/day.

9  
10 3) Grid Enhancement Plan ("GEP") Project – OG&E's \$810 million GEP project  
11 was originally justified based on the Company's projections that the GEP would  
12 produce a 60% reduction in distribution outage time and \$500 million in related  
13 O&M and capital savings. However, after five years and more than \$800 million  
14 of investment, the GEP has not resulted in any reduction to OG&E's system  
15 average outage time and has not resulted in O&M cost savings. Accordingly, I  
16 recommend that the Commission reject OG&E's future requests for cost recovery  
17 of any GEP project investments placed in service after March 31, 2024.

18  
19 4) Sooner and Muskogee Operating Performance - The energy production levels of  
20 OG&E's Sooner and Muskogee coal units have dropped significantly over the  
21 last three years as a result of increases in coal energy production costs,  
22 decreasing SPP locational marginal prices ("LMPs") and high congestion costs at  
23 the Sooner plant. In 2023, the average capacity factors (energy production) of  
24 the two Sooner coal units were approximately 11% while the capacity factor of



1 Muskogee 6 was approximately 17%. These energy production levels are far  
2 below the 60% to 80% capacity factor range that historically has been achieved  
3 by OG&E's coal units in most years. In light of this trend of declining energy  
4 production coupled with potential risks of high environmental compliance costs  
5 for these plants in the future, I recommend that OG&E be required to conduct  
6 analyses to evaluate early retirement and gas-conversion alternatives to continued  
7 operations of the Sooner and Muskogee coal units and to provide these analyses  
8 along with supporting direct testimony in the Company's next base rate case. I  
9 further recommend that the Commission direct OG&E to initiate meetings with  
10 SPP and stakeholders to discuss causes and potential solutions for the high  
11 congestion costs and other factors that are leading to reduced energy production  
12 and lower energy revenues from OG&E's coal units.

13  
14  
15 **III. DISTRIBUTION VEGETATION MANAGEMENT EXPENSE**

16  
17 **Q. WHAT IS OG&E'S PROPOSAL REGARDING DISTRIBUTION VEGETATION**  
18 **MANAGEMENT EXPENSE?**

19 A. OG&E is requesting approval of a proforma adjustment to increase its distribution  
20 vegetation management expense by approximately \$24 million.<sup>4</sup>

21  
22 **Q. HOW WOULD OG&E'S PROPOSAL CHANGE THE LEVEL OF**  
23 **VEGETATION MANAGEMENT EXPENSE THAT WOULD BE RECOVERED**  
24 **FROM OKLAHOMA RATEPAYERS?**

1 A. OG&E indicates that it has been allowed to recover approximately \$25 million for  
2 distribution vegetation management expense in base rates since 2015 and expended  
3 \$26.9 million for such expenses during the Test Year.<sup>5</sup> The Company's proposed \$24  
4 million proforma adjustment would increase the Test Year level of distribution  
5 vegetation management spending by approximately 89% to approximately \$51 million  
6 per year.<sup>6</sup>

7

8 **Q. IS OG&E'S PROPOSAL TO INCREASE DISTRIBUTION VEGETATION**  
9 **MANAGEMENT EXPENSE BY \$24 MILLION PER YEAR REASONABLE,**  
10 **NECESSARY, COST-EFFECTIVE OR OTHERWISE BENEFICIAL TO**  
11 **RATEPAYERS?**

12 A. No. While the Company claims that the proposed increase in spending for vegetation  
13 management is necessary "to realign with current costs, inflation, and increased labor costs to  
14 maintain reliable electric service for our customers"<sup>7</sup> there is no evidence that the Company's  
15 proposal is reasonable, necessary or beneficial to ratepayers. For example, OG&E's direct  
16 testimony implies that vegetation management expenses have been volatile and much  
17 higher in recent years as a result of increased labor rates, inflation, and overall rising  
18 inflationary costs.<sup>8</sup> However, as shown in Table 1 below, OG&E's distribution  
19 vegetation management expenses have remained relatively stable averaging \$26.3

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4 See Exhibit SN-2.

5 See the Direct Testimony of OG&E witness Robert Shaffer, page 3 and Exhibit SN-2.

6 See Exhibit SN-2.

7 See the Direct Testimony of OG&E witness Robert Shaffer, page 3.

8 See the Direct Testimony of OG&E witness Robert Shaffer, pages 3-4.

1 million per year since 2017 and are projected to decline to \$22.8 million in 2024 absent  
 2 adoption of the Company's proposal.

3 **Table 1**  
 4 **OG&E Distribution Vegetation Management O&M Expense**  
 5

<u>Year</u>	<u>Total Expense</u>	<u>Sources</u>
2017	\$27,052,717	PUD 16-05 ATT1
2018	\$25,632,280	PUD 16-05 ATT1
2019	\$24,099,994	OIEC 8-13 ATT1
2020	\$24,073,796	OIEC 8-13 ATT1
2021	\$28,346,928	OIEC 8-13 ATT1
2022	\$27,733,504	OIEC 8-13 ATT1
2023	<u>\$26,916,991</u>	AG 16-12 ATT1
2017-23 Avg	\$26,265,173	
2024 Plan	\$22,810,346	OIEC 8-13 ATT1

6  
 7 **Q. IS OG&E'S REQUEST TO RECOVER \$51 MILLION PER YEAR FOR**  
 8 **DISTRIBUTION VEGETATION MANAGEMENT EXPENSES NECESSARY TO**  
 9 **MAINTAIN RELIABLE SERVICE FOR ITS OKLAHOMA RATEPAYERS?**

10 A. No. In fact, as summarized in Table 2 below, over the last ten years OG&E's  
 11 distribution service reliability has been very high (99.973%) with an average of 140.3  
 12 minutes per year outage time due to all causes, and while spending approximately \$26  
 13 million per year for distribution vegetation management.

14  
 15

**Table 2**  
**OG&E's Oklahoma Area Reliability Performance<sup>9</sup>**

<u>YEAR</u>	<u>SAIDI</u> <u>Outage Minutes/Yr</u>	<u>SAIFI</u> <u>Outages/Yr</u>	<u>RELIABILITY</u> <u>%Total Hrs Served</u>
2014	103.2	0.9	99.980%
2015	137.2	0.9	99.974%
2016	158.4	1.0	99.970%
2017	143.9	0.9	99.973%
2018	130.9	0.9	99.975%
2019	135.4	1.2	99.974%
2020	140.1	2.3	99.973%
2021	160.2	1.1	99.970%
2022	163.4	1.3	99.969%
2023	<u>130.9</u>	<u>1.3</u>	<u>99.975%</u>
2014-2023	140.3	1.2	99.973%

**Q. ARE VEGETATION-RELATED OUTAGES A MAJOR COMPONENT OF THE TOTAL DISTRIBUTION OUTAGE TIME REFLECTED IN TABLE 2 ABOVE?**

A. No. OG&E indicates that vegetation-related outages have averaged approximately 27 minutes per year over the last 4 years and account for only approximately 17.5% of total distribution outage time on OG&E's system.<sup>10</sup> The 27 minutes of vegetation-related outage time per year represents a tiny fraction (0.005%) of the 525,600 total minutes in each year. This means that, even if OG&E's proposed \$24 million per year increase in distribution vegetation management spending reduced vegetation-related outages by 50% (13 minutes/year), the associated improvement in OG&E's Oklahoma area system reliability would be only approximately 0.0025% (i.e., from 99.973% to 99.975%) per year.<sup>11</sup> This very small improvement in service reliability would be imperceptible to

<sup>9</sup> Source is OG&E's response to OIEC 7-23.

<sup>10</sup> See Exhibit SN-3, OG&E's response to OIEC 17-18.

<sup>11</sup> This estimated reliability impact of OG&E's vegetation management proposal is calculated as: (27 mins x 50%) / (525,600 mins/year) = 0.0025%.

1 most Oklahoma customers and therefore would not justify the Company's proposed \$24  
2 million per year increase in vegetation management expense.

3

4 **Q. DOES OG&E PROJECT THAT ITS PROPOSAL TO INCREASE**  
5 **DISTRIBUTION VEGETATION MANAGEMENT SPENDING WOULD**  
6 **IMPROVE DISTRIBUTION SERVICE RELIABILITY IN OKLAHOMA?**

7 A. No. In fact, OG&E indicates that it expects vegetation-related outages to remain at  
8 approximately the same level that has been achieved over the last several years if its  
9 vegetation management proposal is implemented.<sup>12</sup>

10

11 **Q. HAS OG&E RECEIVED MANY CUSTOMER COMPLAINTS REGARDING**  
12 **THE COMPANY'S DISTRIBUTION SERVICE RELIABILITY?**

13 A. No. OG&E indicates that over the last five years the Company has received an average  
14 of 31 complaints/year regarding service reliability, which represents just under 0.004%  
15 of its 800,000 Oklahoma customers.<sup>13</sup> Such a small number of complaints indicates  
16 high customer satisfaction with OG&E's Oklahoma distribution service reliability.  
17 Moreover, the Company indicates that *none* of the service reliability complaints it  
18 received during the last five years were ultimately determined to be warranted  
19 complaints.<sup>14</sup>

20

---

12 See Exhibit SN-4, OG&E's response to OIEC 17-19.

13 See Exhibit SN-5, OG&E's response to OIEC Data Request 18-25.

14 *Ibid.*

1 **Q. ARE THERE OTHER REASONS WHY OG&E'S PROPOSAL TO INCREASE**  
2 **DISTRIBUTION VEGETATION MANAGEMENT EXPENSE BY \$24 MILLION**  
3 **IS NOT NEEDED?**

4 A. Yes. OG&E has invested approximately \$240 million over the last three years for  
5 weather hardening projects that are designed to help reduce vegetation-related outages  
6 on its distribution system.<sup>15</sup> Considering this significant recent investment for projects  
7 that are expected to reduce vegetation related outages, there is no need for the Company  
8 to also increase spending on distribution vegetation management by another \$24 million  
9 per year, particularly given the small impact of vegetation outages on distribution system  
10 reliability and considering the fact that OG&E does not project that such increased  
11 spending would improve distribution service reliability.

12  
13 **Q. WHAT IS YOUR RECOMMENDATION REGARDING OG&E'S**  
14 **DISTRIBUTION VEGETATION MANAGEMENT EXPENSE PROPOSAL?**

15 A. I recommend that the Commission reject OG&E's request that it be allowed to recover  
16 an additional \$24 million per year in distribution vegetation management expense  
17 through its Oklahoma retail rates because the proposal is not reasonable, necessary or  
18 expected to improve service reliability or otherwise benefit customers.

19  
20 **IV. COAL INVENTORY**

21 **Q. WHAT AMOUNT HAS OG&E REQUESTED FOR COAL INVENTORY IN**  
22 **THIS CASE?**

1 A. OG&E has requested that it be allowed to include approximately \$123 million (Total  
2 Company) for coal inventory in rate base in this case.<sup>16</sup>

3

4 **Q. WHAT IS THE BASIS FOR OG&E'S COAL INVENTORY REQUEST?**

5 A. OG&E's coal inventory request is based on the average coal inventory level of 2.52  
6 million tons and average inventory value of \$48.81/ton for the 13-month period ending  
7 March 31, 2024.<sup>17</sup>

8 **Q. HOW DOES OG&E'S UPDATED COAL INVENTORY REQUEST COMPARE**  
9 **TO THE COAL INVENTORY LEVEL REQUESTED IN THE COMPANY'S**  
10 **ORIGINAL APPLICATION?**

11 A. OG&E's updated coal inventory request of \$123 million is approximately \$28 million  
12 (30%) higher than the \$94.8 million coal inventory level requested in the Company's  
13 original application.<sup>18</sup> This increase in requested coal inventory is primarily due to the  
14 fact that OG&E's coal inventory level increased by approximately 54% from the 1.86  
15 million tons in its original filing to the 2.52 million tons in updated request.<sup>19</sup>

16

17 **Q. DO YOU HAVE CONCERNS REGARDING OG&E'S REQUESTED COAL**  
18 **INVENTORY?**

19 A. Yes. I am concerned that the level of requested inventory is unreasonably high and  
20 unjustified considering the declining level of energy production by OG&E's coal plants

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15 See Exhibit SN-6, Excerpts from the Direct Testimony of OG&E witness Kandace Smith in PUD Cause No. 2021-00164.

16 See Exhibit SN-7.

17 *Ibid.*

18 *Ibid.*

19 *Ibid.*

1 over the last three years and when compared to the much lower level of coal inventory  
2 that has been allowed in OG&E's previous base rate cases. For example, the requested  
3 2.52 million tons of coal inventory equates to 308 days of inventory based on the 8,167  
4 tons per day average coal usage level of OG&E's coal units over the last three years.<sup>20</sup>  
5 This level of coal inventory far exceeds the allowed inventory levels in past OG&E  
6 cases.

7  
8 **Q. HOW DOES OG&E'S COAL INVENTORY REQUEST COMPARE TO THE**  
9 **INVENTORY LEVEL ALLOWED BY THE COMMISSION IN THE**  
10 **COMPANY'S LAST BASE RATE CASE?**

11 A. OG&E's \$123 million (Total Company) coal inventory request is nearly 4 times the  
12 \$31.7 million (Total Company) coal inventory level approved by the Commission in the  
13 Company's last base rate case.<sup>21</sup> The requested 2.52 million tons of coal inventory is  
14 also 2.6 times the 962,406 tons of coal inventory allowed in the Company's last case.<sup>22</sup>

15  
16 **Q. WHAT IS YOUR RECOMMENDATION REGARDING OG&E'S COAL**  
17 **INVENTORY REQUEST?**

18 A. I recommend that OG&E's requested \$123 million (Total Company) coal inventory be  
19 reduced to a level of \$46.98 million (Total Company). My recommended coal inventory  
20 level is based on the Company's average coal inventory value of \$48.81/ton for the 13-  
21 month period ending March 31, 2024, and my recommended inventory level of 962,406

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<sup>20</sup> See Exhibit SN-8.

<sup>21</sup> See Exhibit SN-9, OG&E's response to OIEC 11-4.

<sup>22</sup> *Ibid.*



1 tons. My recommended inventory level of 962,406 tons equates to 43 days of inventory  
2 at the maximum monthly coal burn rate of approximately 22,382 tons/day as recorded  
3 over the 36-months ending December 31, 2023, which occurred in August of 2021.<sup>23</sup>  
4 My recommended inventory level is essentially the same inventory level (963,200 tons)  
5 allowed by the Commission in OG&E's last rate case.<sup>24</sup> My recommended \$46.98  
6 million (Total Company) coal inventory reduces OG&E's proposed \$123 million (Total  
7 Company) coal inventory request by approximately \$76 million (Total Company) and  
8 would provide approximately 118 days of inventory based on the Company's average  
9 coal burn level of 8,167 tons per day over the last three years.<sup>25</sup>  
10

11 **V. GRID ENHANCEMENT PLAN**

12  
13 **Q. PLEASE DESCRIBE OG&E'S GEP PROJECT?**

14 A. OG&E's GEP project is a five-year initiative implemented in 2020 that is designed to  
15 improve distribution system reliability and resiliency for the benefit of Oklahoma  
16 customers.<sup>26</sup>  
17

18 **Q. WHAT IS THE ESTIMATED COST OF THE GEP PROJECT?**

---

<sup>23</sup> See Exhibit SN-8.

<sup>24</sup> See Exhibit SN-9.

<sup>25</sup> See Exhibit SN-8.

<sup>26</sup> See Exhibit SN-6, page 4 of the Direct Testimony of OG&E witness Kandace Smith in PUD Cause No. 2021-00164.

1 A. At the time OG&E initiated the Project in 2020, the Company estimated that the GEP  
 2 project investment would total approximately \$810 million over five years as  
 3 summarized in Table 3 below:  
 4

5  
 6 **Table 3**  
 7 **Estimated Investment for Grid Enhancement Plan (\$Millions)<sup>27</sup>**  
 8

<u>Investment Category</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>Total Cost</u>	<u>% of Total</u>
Grid Resiliency	\$50.1	\$71.8	\$86.8	\$86.8	\$86.8	\$382.3	47.2%
Grid Automation	\$36.5	\$52.0	\$61.5	\$61.5	\$61.5	\$273.0	33.7%
Communications Systems	\$0.0	\$30.0	\$16.7	\$16.7	\$16.7	\$80.1	9.9%
Technology Platforms & Applications	<u>\$2.4</u>	<u>\$18.4</u>	<u>\$18.0</u>	<u>\$18.0</u>	<u>\$18.0</u>	<u>\$74.8</u>	<u>9.2%</u>
Total Investment	\$89.0	\$172.2	\$183.0	\$183.0	\$183.0	\$810.2	100.0%

9  
 10 **Q. WHAT AMOUNT HAS OG&E’S INVESTED IN THE GEP PROJECT SINCE**  
 11 **THE COMPANY’S LAST RATE CASE?**

12 A. OG&E has invested approximately \$177 million for the GEP since the Company’s last  
 13 base rate case.<sup>28</sup>  
 14

15 **Q. HOW ARE COSTS OF THE GEP RECOVERED BY OG&E?**

16 A. OG&E is allowed to recover up to \$6 million per year of capital revenue requirements  
 17 associated for Grid Automation, Communication Systems and Technology Platform

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27 See Exhibit SN-10, Excerpts from the Direct Testimony of OG&E witness Zachary Gladhill in PUD Cause No. 2020-00021, page 14, Table 1.

1 projects as reflected in annual GEP investment plans submitted for 2022, 2023 and 2024  
2 through its existing Grid Enhancement Mechanism (“GEM”) Rider.<sup>29</sup> The remaining  
3 costs of the GEP are collected through base rates if approved by the Commission. It is  
4 my understanding that the Joint Stipulation and Settlement Agreement from OG&E’s  
5 last base rate case, PUD Cause No. 2021-00164 provided that GEP investments that  
6 were placed in service as of March 31, 2022 are deemed to be prudent and to be included in  
7 OG&E’s rate base.

8  
9 **Q. WHAT ARE OG&E’S PROJECTED BENEFITS FOR THE GEP PROJECT?**

10 A. OG&E projected that the GEP would reduce the duration and number of outages  
11 experienced by customers by 60% and that customers would also realize O&M and  
12 capital savings of approximately \$500 million on a present value basis over the life of  
13 the project.<sup>30</sup> OG&E also projected that the GEP would result in \$1.4 billion of  
14 “avoided economic harm” benefits arising from the projected 60% reduction in outage  
15 time.<sup>31</sup> However, these projected avoided economic harm benefits do not represent  
16 reductions in OG&E’s charges for electric service, but rather are estimated non-electric  
17 benefits (e.g., reduced food spoilage costs and business interruption costs) related to the  
18 projected 60% reduction in outage time that the Company attributes to the GEP.

19  

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<sup>28</sup> See the Direct Testimony of OG&E witness Brian Huckabay, page 6, Table 1.

<sup>29</sup> See Exhibit SN-11.

<sup>30</sup> See Exhibit SN-10, pages 16-17 of the Direct Testimony of OG&E witness Zachary Gladhill in PUD Cause No. 2020-00021.

<sup>31</sup> See Exhibit SN-10, page 18 of the Direct Testimony of OG&E witness Zachary Gladhill in PUD Cause No. 2020-00021.

1 **Q. HAVE THE PROJECTED BENEFITS OF THE GEP BEEN REALIZED TO**  
 2 **DATE?**

3 A. No. In fact, there has been no improvement to OG&E’s system reliability or any O&M  
 4 or other savings to customers since the Company’s \$810 million investment in the GEP  
 5 was initiated in 2020. As summarized in Table 4 below, the average number and  
 6 duration of outages on OG&E’s system have actually increased since the GEP was  
 7 implemented in 2020.

8 **Table 4**  
**OG&E’s Distribution System Reliability Performance**  
**Before and After the GEP was Implemented<sup>32</sup>**

<u>YEAR</u>	<u>SAIDI</u> <u>Outage Minutes/Yr</u>	<u>SAIFI</u> <u>Outages/Yr</u>	<u>RELIABILITY</u> <u>%Total Hrs Served</u>
2014	103.2	0.9	99.980%
2015	137.2	0.9	99.974%
2016	158.4	1.0	99.970%
2017	143.9	0.9	99.973%
2018	130.9	0.9	99.975%
2019	135.4	1.2	99.974%
2020	140.1	2.3	99.973%
2021	160.2	1.1	99.970%
2022	163.4	1.3	99.969%
2023	<u>130.9</u>	<u>1.3</u>	<u>99.975%</u>
2014-2018	134.7	0.9	99.974%
2019-2023	146.0	1.5	99.972%

9 **Q. HAS THERE BEEN ANY REDUCTION IN DISTRIBUTION SYSTEM**  
 10 **EXPENSES SINCE THE GEP WAS IMPLEMENTED?**

11 A. No. Although OG&E’s cost/benefit analysis for the GEP assumed \$500 million in  
 12 distribution O&M and capital additions savings would result from the Project, the

1 Company's distribution O&M expenditures have actually increased by approximately  
2 \$35 million per year (35%) since the GEP was initiated in 2019.<sup>33</sup>

3  
4 **A. WHAT OTHER JUSTIFICATION HAS OG&E PROVIDED TO SUPPORT THE**  
5 **COMPANY'S \$810 MILLION GEP PROJECT?**

6 A. OG&E claims that there is a rising expectation among customers that power will always  
7 be on and available, and that these "customer expectations are the very reasons it is  
8 necessary for OG&E to make the grid enhancement investments."<sup>34</sup> However, there is  
9 no evidence to support these claims. For example, as shown in Table 4 above, OG&E's  
10 average Oklahoma area distribution service reliability was 99.974% in the 5 years before  
11 the GEP was implemented. This level of reliability is very close to "power on in all  
12 hours" and it offers little opportunity for improvement.

13 Moreover, OG&E admits that it has received zero warranted customer complaints  
14 regarding distribution service reliability from its 800,000 Oklahoma retail customers  
15 over the last five years notwithstanding the fact that reliability service has not improved  
16 since the GEP was implemented.<sup>35</sup>

17  
18 **Q. WOULD OG&E'S DISTRIBUTION RELIABILITY PERFORMANCE BE**  
19 **MATERIALLY BETTER IF THE COMPANY'S PROJECTED 60%**  
20 **REDUCTION IN OUTAGE TIME FOR THE GEP HAD BEEN REALIZED?**

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32 Source of data is OG&E's response to OIEC 7-23.

33 See Exhibit SN-12.

34 See Exhibit SN-6, Excerpts from the Direct Testimony of OG&E witness Kandace Smith in PUD Cause No. 2021-00164, page 7.

35 See Exhibit SN-5.

1 A. No. For example, a 60% reduction in the 134.7 minutes/year average outage time in the  
2 5 years before the GEP was implemented equates to a potential reduction of  
3 approximately 81 minutes/year.<sup>36</sup> Although no improvement in system reliability has  
4 been achieved since the GEP was implemented in 2019, assuming this level ultimately  
5 were to be achieved, it would represent a reduction in outage time of only 0.015% of the  
6 total minutes in a typical year. Such an improvement would increase OG&E's system  
7 average distribution reliability from the 99.974% system average level in the 5 years  
8 before the GEP to 99.989% with the GEP. Very few OG&E customers would notice  
9 such a small improvement in reliability performance or consider it to be worth spending  
10 \$810 million to achieve such an improvement.

11  
12 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS**  
13 **REGARDING OG&E'S PROPOSED GEP PROJECT?**

14 A. Although OIEC supports prudent investments that ensure reliable service and security of  
15 OG&E's transmission and distribution grids, the Company's \$810 million investment in  
16 the GEP project has not produced the distribution service reliability benefits or the  
17 distribution O&M savings projected by the Company. For these reasons, I recommend  
18 that the Commission disallow the recovery of any further investments on the GEP  
19 project that are placed in service after March 31, 2024.

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<sup>36</sup> See the Direct Testimony of OG&E witness Kandace Smith, page 17.

**VI. COAL PLANT OPERATIONS**

1  
 2 **Q. DO YOU HAVE ANY CONCERNS REGARDING THE OPERATIONS OF**  
 3 **OG&E’S COAL PLANTS DURING THE TEST YEAR?**

4 A. Yes. I am concerned with the declining energy production levels and high operating  
 5 costs of OG&E’s Sooner and Muskogee coal units over the last several years. For  
 6 example, as shown in Table 5 below, the energy production of OG&E’s Sooner and  
 7 Muskogee coal units has trended downward over the last ten years and in 2023 the  
 8 capacity factors of these units dropped below 20%.  
 9

**Table 5**  
**Sooner and Muskogee Coal Unit Energy Production, MWh**

	<u>Sooner 1</u>	<u>Sooner 2</u>	<u>Muskogee 6</u>
2015	2,958,286	2,663,166	2,055,182
2016	2,086,034	1,973,975	1,836,329
2017	1,808,632	1,775,710	2,550,490
2018	2,378,376	2,068,322	1,745,866
2019	1,935,637	1,769,616	675,624
2020	1,324,603	1,063,047	1,419,356
2021	1,347,308	1,847,378	2,777,036
2022	1,326,463	1,362,880	1,027,541
2023	500,814	487,211	786,861
2015-2019	2,233,393	2,050,158	1,772,698
2020-2023	1,124,797	1,190,129	1,502,699
MWh Reduction	49.6%	41.9%	15.2%
2023 Capacity Factor	11.1%	10.7%	17.2%

10 **Q. WHY IS LOW ENERGY PRODUCTION A PROBLEM FOR OG&E’S SOONER**  
 11 **AND MUSKOGEE COAL UNITS?**

1 A. Coal-fired generating units typically have relatively low fuel costs and high non-fuel  
2 O&M and capital costs. The primary value of coal units is their ability to produce  
3 energy sales revenues that offset the relatively high capital and operating costs of the  
4 units. However, over the last five years, the energy production of OG&E's Sooner coal  
5 units have dropped by approximately 45% when compared to their production over the  
6 previous five years, and in 2023 the capacity factors of the Sooner units dropped to  
7 approximately 11% while the capacity factor of Muskogee 6 fell to 17.2%. My concern  
8 is that if OG&E's coal units continue to produce energy at the these relatively low levels  
9 it will be increasingly difficult to justify the high ongoing O&M and capital costs  
10 required to maintain the facilities in service, particularly if costs to comply with new  
11 environmental regulations become a problem.

12

13 **Q. WHY DID THE ENERGY PRODUCTION LEVELS AT OG&E'S SOONER AND**  
14 **MUSKOGEE COAL UNITS DROP SIGNIFICANTLY OVER THE LAST**  
15 **SEVERAL YEARS?**

16 A. As summarized in Table 6 below, the average costs of energy (\$/MWh) produced by the  
17 Sooner and Muskogee coal units were higher than the average locational marginal price  
18 ("LMP") of energy at each plant during the last two years. The relatively low LMPs at  
19 the at the Sooner Station appear to be due to the high congestion costs experienced at  
20 Sooner during this period.



**Table 6**  
**OG&E Coal Unit Energy Production During 2021-2023**

	<u>2021</u>	<u>2022</u>	<u>2023</u>
<u>Sooner 1</u>			
Energy, MWh	1,347,308	1,326,463	500,814
Capacity Factor	29.8%	29.3%	11.1%
Energy Cost, \$/MWh	\$21.08	\$38.25	\$45.42
LMP, \$/MWh	\$21.04	\$28.26	\$14.07
<u>Sooner 2</u>			
Energy, MWh	1,847,378	1,362,880	487,211
Capacity Factor	40.6%	29.9%	10.7%
Energy Cost, \$/MWh	\$20.04	\$36.23	\$39.54
LMP, \$/MWh	\$17.90	\$23.96	\$14.30
<u>Muskogee 6</u>			
Energy, MWh	2,778,343	1,027,541	786,861
Capacity Factor	60.9%	22.5%	17.2%
Energy Cost, \$/MWh	\$23.79	\$37.84	\$39.52
LMP, \$/MWh	\$30.90	\$50.74	\$25.23

1    **Q.    WHY WERE ENERGY PRODUCTION COSTS AT OG&E’S SOONER AND**  
 2            **MUSKOGEE COAL PLANTS HIGHER THAN NORMAL DURING THE LAST**  
 3            **SEVERAL YEARS?**

4    A.    The relatively high cost of energy produced at Sooner and Muskogee appears to be due  
 5            to higher coal prices, which increased to more than \$3.00 per MMBtu during 2022 and  
 6            2023, and OG&E’s usage of coal adders to limit coal usage as a means to maintain  
 7            adequate inventories. OG&E indicates that the increase in coal prices at the Sooner and  
 8            Muskogee coal units was due to high demand for coal and coal transportation supply  
 9            chain problems.<sup>37</sup>

10

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<sup>37</sup> See Exhibit SN-13, Excerpts from the Direct Testimony of OG&E witness Shawn McBroom in PUD Cause No. 2023-00055.

1 **Q. WHAT ARE CONGESTION COSTS AND WHY ARE HIGH CONGESTION**  
2 **COSTS CONTRIBUTING TO LOWER ENERGY PRODUCTION FROM THE**  
3 **SOONER COAL UNITS?**

4 A. Congestion costs are amounts paid to deliver energy over constrained transmission paths  
5 at specific delivery points within the SPP market. As a general rule, higher congestion  
6 costs associated with constrained transmission paths result in lower LMPs and lower  
7 LMPs in turn generally result in reduced energy production and lower energy revenues.  
8 The average congestion costs for the Sooner coal units increased significantly in 2022  
9 and 2023, and accordingly LMPs and energy production at Sooner dropped significantly  
10 during this period.<sup>38</sup>

11  
12 **Q. WHAT HAS OG&E DONE TO ADDRESS THE HIGH CONGESTION COSTS**  
13 **WHICH HAVE CONTRIBUTED TO THE DECLINING ENERGY**  
14 **PRODUCTION LEVELS OF THE SOONER COAL UNITS?**

15 A. Not much. In fact, the Company indicates that it does not know why congestion costs  
16 are high at the Sooner plant or other OG&E coal plants.<sup>39</sup> Moreover, OG&E admits that  
17 it has no documentation of any communications the Company has had with SPP to  
18 discuss mitigation of the high congestion costs experienced by the Sooner coal units and  
19 other OG&E resources.<sup>40</sup>

20

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<sup>38</sup> See CONFIDENTIAL Exhibit SN-14.

<sup>39</sup> See Exhibit SN-15, OG&E's response to OIEC 18-19.

<sup>40</sup> See Exhibit SN-16, OG&E's response to OIEC 12-8.

1 **Q. HAS OG&E CONDUCTED ANY ECONOMIC ANALYSIS TO DETERMINE IF**  
2 **CONTINUED OPERATIONS OF THE SOONER AND MUSKOGEE COAL**  
3 **UNITS IS ECONOMICALLY JUSTIFIED IF THE CURRENT TRENDS OF**  
4 **HIGH COAL PRODUCTION AND OPERATING COSTS, HIGH CONGESTION**  
5 **COSTS, LOW LMPS AND LOW COAL ENERGY PRODUCTION LEVELS**  
6 **CONTINUE IN THE FUTURE?**

7 A. No. Although OG&E conducted limited analysis in its recently issued Draft 2024  
8 Integrated Resource Plan (“2024 IRP”) that considered early retirement, retrofit or  
9 conversion of *all OG&E coal* units on pre-determined dates, the Company’s 2024 IRP  
10 does not include any analysis to determine the optimal disposition strategy or retirement  
11 dates for specific OG&E coal units.<sup>41</sup>

12  
13 **Q. WHAT ARE YOUR RECOMMENDATIONS TO ADDRESS YOUR CONCERNS**  
14 **REGARDING THE DECLINING ENERGY PRODUCTION LEVELS, HIGH**  
15 **CONGESTION COSTS AND HIGH ONGOING OPERATING COSTS OF**  
16 **OG&E’S SOONER AND MUSKOGEE COAL UNITS?**

17 A. I recommend that the Commission direct OG&E to initiate meetings with SPP and  
18 OG&E’s stakeholders to discuss the causes and potential solutions for the high  
19 congestion costs that are serving to reduce energy production and energy revenues at the  
20 Sooner plant and at certain OG&E wind facilities and present the results of such  
21 meetings in direct testimony to be filed later this year in the Company’s fuel prudence  
22 review case for calendar year 2023. In addition, I recommend that the Commission

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<sup>41</sup> See Exhibit SN-17, Excerpts from OG&E’s 2024 Draft IRP.

1 direct OG&E to conduct an analysis to assess early retirement, retrofit and gas  
2 conversion alternatives to the current plan of continued operations of the Sooner and  
3 Muskogee coal units, and to present the results of those analyses as a supplemental  
4 technical appendix to the Company's final 2024 IRP.

5  
6 **Q. DOES THAT CONCLUDE YOUR TESTIMONY FOR THE REVENUE**  
7 **REQUIREMENT PHASE OF THIS PROCEEDING?**

8 A. Yes.

**CERTIFICATE OF MAILING**

This is to certify that on this 26th day of April, 2024, a true and correct copy of the above and foregoing was emailed, addressed to:

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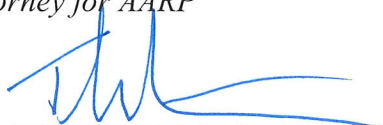
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