

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) CASE NO. PUD 2023-000087
AUTHORIZING APPLICANT TO MODIFY ITS)
RATES, CHARGES, AND TARIFFS FOR RETAIL)
ELECTRIC SERVICE IN OKLAHOMA)

Direct Testimony

of

Robert Shaffer

on behalf of

Oklahoma Gas and Electric Company

December 29, 2023

Robert Shaffer
Direct Testimony

1 Q. **Please state your name, position, by whom you are employed, and your business**
2 **address.**

3 A. My name is Robert Shaffer. I am the Manager of Asset Management for Oklahoma Gas
4 and Electric Company (“OG&E” and/or the “Company”). My business address is 321 N.
5 Harvey, Oklahoma City, Oklahoma, 73102.
6

7 Q. **Please summarize your professional qualifications and educational background.**

8 A. I graduated Oklahoma State University with a Bachelor of Science degree in Electrical
9 Engineering and the University of Oklahoma with a Master of Science degree in Industrial
10 Engineering with a focus on Reliability. I joined OG&E in January of 2015 as a Senior
11 Engineer in Asset Management. My principal duties were to measure and evaluate the
12 reliability of our system and the impacts of our programs to help improve customer
13 reliability and satisfaction. In 2019, I became the Manager of Asset Management for
14 OG&E. As manager, I lead a team of engineers and analysts that plan and prepare our
15 system for inspections, and asset lifecycle replacements. Prior to my career at OG&E, for
16 13 years I held several Engineering positions at Tinker Air Force Base. My responsibilities
17 included engineering, troubleshooting, building maintenance plans, upgrading designs, and
18 managing the reliability and availability of industrial plant equipment. My entire career
19 has been focused on system reliability and asset lifecycle management for various types of
20 equipment.
21

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

23 A. No.

24 Q. **What is the purpose of your direct testimony?**

25 A. The purpose of my direct testimony is to present an explanation of the Company’s current
26 needs for delivering reliable and safe electricity to Oklahoma customers and a description
27 of the Company’s recommended changes to its Vegetation Management Program. OG&E

1 is recommending the Commission approve the Company's proposal to annually spend
2 approximately \$58 million in Oklahoma on vegetation management and to implement a
3 regulatory "tracker" to track the Company's spending on its Vegetation Management
4 Program in between rate cases and defer any deviations from Commission approved levels
5 to a regulatory asset/liability to be addressed in OG&E's next general rate case. The
6 Company's requested \$58 million annual vegetation management expense level includes
7 an increase of approximately \$28 million per year in addition to the \$30 million currently
8 included in base rates, which was last approved in OG&E's 2015 rate case.

9
10 **Q. Please provide an overview of the Company's Vegetation Management Program and**
11 **Commission authorized spending levels.**

12 A. OG&E's current Vegetation Management Program consists of saw work, herbicide, growth
13 regulators, and removals on the distribution and transmission systems in Oklahoma. The
14 work also includes mowing and management of land within substations, switching stations,
15 and other facilities owned by OG&E. In the Company's 2015 rate case, the Commission
16 authorized OG&E's expense of approximately \$30 million for vegetation management,
17 which included approximately \$25 million per year for distribution vegetation management
18 and \$4.5 million per year for transmission vegetation management. These previously
19 approved amounts have not changed since the 2015 rate case, and OG&E is requesting in
20 this proceeding an increase to those previously approved spending levels to realign with
21 current costs, inflation, and increased labor costs to maintain reliable electric service for
22 our customers.

23 **Q. Please explain the Company's requested increase in its vegetation management spend**
24 **in Oklahoma.**

25 A. OG&E is requesting an additional \$28 million annually along with a tracking mechanism
26 to track the Company's expenses and the volatility attributed to distribution and
27 transmission vegetation management. This request is based upon increased labor rates,
28 inflation, and overall rising inflationary costs in recent years. The Company is also
29 requesting a vegetation management tracker, which will provide the Company flexibility

1 in tracking volatility in numerous areas of vegetation management expenses. Some of
2 these expenses include:

- 3 • Changes in labor costs
- 4 • Trimming crew availability
- 5 • Bucket versus climbing work
- 6 • Customer requests
- 7 • Excessive vegetation growth rates
- 8 • Right of way access issues
- 9 • Customer landscaping and improvements
- 10 • Equipment pathway obstructions
- 11 • Easement encroachments by customer owned property, and
- 12 • Customer refusals.

13 Similar to OG&E's existing pension expense tracker, a vegetation management tracker
14 would protect customers by ensuring they only pay for the exact amount of vegetation
15 management expense incurred by the Company each year. A tracking mechanism will
16 allow the Company to capture vegetation management expenses levels that deviate from
17 Commission approved levels in between rate cases. The Commission would then review
18 the expenses deferred to the tracker in the Company's general rate case and determine if
19 any change in vegetation management expense was prudently incurred, prior to allowing
20 the Company to recover the expense from customers. This tracker is necessary due to the
21 increasing volatility in the aforementioned expenses as discussed below. The vegetation
22 management tracker is further addressed in the Direct Testimony of Jason Thenmadathil.

23 **Q. How will the requested increase in vegetation management expense be utilized?**

24 **A.** OG&E has used a myriad of different vegetation management practices to make the most
25 of the current expense level authorized by the Commission. As contract labor rates
26 increased over the years, OG&E has increasingly utilized less expensive, alternative
27 vegetation methods such as herbicide, vegetation growth regulators and work prioritization
28 to stretch the amount of authorized vegetation management expense to as many circuits as
29 possible. The increased use of herbicides and work prioritization is not as expensive as

1 trimming activities and vegetation removal, which have only become more expensive with
 2 inflation over the past few years. Essentially, the ideal tools for effectively managing
 3 vegetation have become more expensive to deploy. And continuing to cut back on the
 4 more effective techniques is not sustainable for OG&E's efforts to continue to operate the
 5 grid to reliably deliver electricity to our customers.

6
 7 **Q. Have tree related outages been increasing?**

8 **A.** Yes. Tree related outages are increasing on the system. Since 2015, tree related outages
 9 have steadily grown in number each year. As seen in Table 3, tree related outages
 10 significantly increased in 2020 and continue today.

Table 1: Tree-Related Outages

Oklahoma Tree Related Causes resulting in Outages on the system, by Year									
<i>Tree Related Causes</i>	2015	2016	2017	2018	2019	2020	2021	2022	2023*
<i>TREE:NON PREVENTABLE</i>	532	557	493	413	495	501	552	461	312
<i>TREES : GROW IN</i>	1,997	2,027	1,861	1,586	2,043	3,390	3,200	2,833	2,740
<i>Total</i>	2,529	2,584	2,354	1,999	2,538	3,891	3,752	3,294	3,052
* Up to November 30, 2023									

11 **Q. Are there benefits when performing planned vegetation management versus**
 12 **performing vegetation during weekends, emergencies or after storms?**

13 **A.** Yes. When vegetation management is performed during normal working hours, the labor
 14 rates are expensed at normal rates. If vegetation management is needed during the
 15 weekend, after hours or late at night, the rates tend to increase, adding additional cost to
 16 manage the same amount of vegetation. Vegetation management labor costs following
 17 severe weather can also increase due to the emergent nature of the work. Additionally,
 18 damage and destruction to the system, blocked roads, and yard debris can hinder access to
 19 vegetation tangled in the lines thereby slowing down the amount of work performed per
 20 hour.

1 Q. **How will the Company's request in this case address the problems with the current**
2 **level of vegetation management expense?**

3 A. The Company's current requested increase to its vegetation management base rate expense
4 level, along with a vegetation management tracker will allow for OG&E to redistribute
5 resources and achieve the appropriate balance among its vegetation management
6 techniques. The requested increase to the Company's vegetation management expense
7 level will pave a path to logically address the resource gap in OG&E's vegetation
8 management program and be able to focus on the most effective but more expensive
9 actions. It also allows OG&E's budget to reflect the use of new satellite planning
10 technology and analysis, and to be able to budget for increased instances of customer
11 requested removal of vegetation on the Company's system.

12
13 Q. **Can you further explain the request for additional vegetation management spend?**

14 A. The requested increase in funding will provide additional resources to both distribution and
15 transmission work. OG&E is requesting an increase of approximately \$16 million for
16 distribution cycle work, an increase of approximately \$7.9 million for customer and
17 reliability requests, and an increase of approximately \$1.24 million for distribution
18 substation facility clearing. These increases will allow OG&E to focus on the proper
19 balance of different vegetation management cycle techniques and have a defined budget
20 for customer and reliability requests (which are considered non-cycle) and distribution
21 substation clearing.

22 For Transmission related work, OG&E is requesting an increase of approximately
23 \$335,000 for transmission cycle related work and an increase of approximately \$2 million
24 for substation facility clearing. While the proposed increase is not significant for
25 transmission cycle work overall, the increased amount of transmission substation work
26 over the past several years has taken away from the overall transmission cycle work budget.
27 Thus, a separate expense level for that transmission substation clearing work will ensure
28 enough funding is dedicated to cycle-related work.

29

1 Q. **Please explain how contractor availability and increased costs have impacted**
 2 **vegetation management work during the test year?**

3 A. OG&E relies on specialized vegetation contractors to complete all its line clearance work,
 4 including tree trimming and tree removals. Since the Commission last approved the
 5 Company's vegetation management expense level in its 2015 rate case, OG&E contractor
 6 costs have increased by approximately 63%. OG&E vegetation management contracts
 7 have several levels of labor rates that are based upon the technical experience level of the
 8 contractors. Experience level "A" are entry level employees and the lower cost labor.
 9 Experience level "B" are mid-level employees and Experience level "C" employees are
 10 tenured employees that oversee other lower-level employees. The hourly wage increases
 11 as experience level is increased.

13 Q. **Can you give an example of the labor costs increases for vegetation management**
 14 **labor?**

15 A. As demonstrated in Table 2 below, the four contractor companies who have employees at
 16 "Experience Level A" in 2015 had an average labor cost of \$22.76 per hour in 2015. By
 17 2023, that same average labor rate had climbed to \$38.85 per hour, an increase of 70%.

Table 2: Labor Rate Comparison

Experience Level A			
Company	2015 Labor Rates	2023 Labor Rates	% Increases
Company A	\$ 22.37	\$ 35.60	59%
Company B	\$ 21.83	\$ 40.93	87%
Company C	\$ 25.00	\$ 40.81	63%
Company D	\$ 21.82	\$ 38.05	74%
Average	\$ 22.76	\$ 38.85	71%

18 Overall, for the four contractor companies, and each of the three levels of labor, the labor
 19 costs have increased significantly since 2015 as seen in Table 3 below. On average, all
 20 labor costs have increased by 63 percent.

Table 3: Percent Increases in Cost

Percent Increases in Vegetation Management Cost, 2015-2023			
Company	Experience A	Experience B	Experience C
Company A	59%	63%	25%
Company B	87%	80%	80%
Company C	63%	53%	43%
Company D	74%	71%	57%
Average	71%	67%	51%
Overall Average	63%		
Standard Deviation	17%	+/-	

1 Q. **Are the increases in labor costs consistent across the industry?**

2 A. Yes. These costs are in line with what the Bureau of Labor Statistics (“BLS”) has
 3 calculated year over year for the occupational code 37-3013; Tree Trimmers and Pruners.
 4 From 2015 to 2022, costs have increased on average by 38%. If you factor in an 8%
 5 increase for the 2023 year, the overall increase in costs is 49%. In 2024, the overall increase
 6 would be 60%. There are slight differences in the percentage increase amounts from the
 7 BLS versus OG&E due to OG&E using actual cost data. The BLS statistics used here are
 8 for nation-wide comparisons rather than regional or local.

9 These labor rate increases are likely caused by inflation but also increased demand
 10 for these services. In fact, OG&E has faced uncertainty with the availability of its
 11 vegetation contractors, who are a highly specialized workforce and are in high demand by
 12 all regional utilities. This contractor demand has contributed to cost increases that are
 13 driven by regional factors such as weather and competition for contractors.
 14

15 Q. **Why is a tracker appropriate for these costs?**

16 A. Vegetation management costs are highly variable. Not only have the costs been changing
 17 fast due to inflationary pressures and higher demand for these services, but there is a lot of
 18 variability given the size of the Company’s service area and weather-related events. The
 19 following variable factors impact vegetation management work:

- 20 1. Growth rates in OG&E’s service territory
- 21 2. Urban versus rural clearing

1 3. Customer density and access to rights of way

2 4. Customer requests

3
4 **Q. Why are the growth rates important and how do they impact typical work**

5 A. Oklahoma has wildly varying amounts of rain and temperatures year-over-year by location
6 within the state. For example, eastern portions of the Company's service territory
7 experience 50 inches of rain, less days over 100 degrees, and less day's average lows under
8 32 degrees per year versus the northwest portions of the state. The northwest portions of
9 the service territory experience half the amount of rain, twice the number of days above
10 100 degrees and almost twice the number of day's average lows below 32 degrees
11 compared to eastern portions of the state.

12 The additional rain and temperate conditions are ideal growth environments for
13 many types of vegetation growth, which impacts the amount of cycle or vegetation
14 management work necessary to control vegetation.

15 Ideal rainfall and temperate conditions tend to affect how fast and how dense
16 vegetation grows around the Company's facilities. This extremely fast growth can "bust"
17 or outpace the average expected vegetation growth rates, which cause damages to the
18 Company's infrastructure. The damage to the infrastructure is not always apparent as faults
19 caused by branches brushing into electrical lines, which can cause internal damage to
20 conductors, transformers, and other distribution equipment. These "*through*" faults
21 damage equipment insulation and shortens its lifecycle. The faults also cause momentary
22 and sustained outages for customers which impacts reliability. Additionally, the higher
23 growth rates create additional vegetation management work and removals for the next
24 cycle's planned management.

25
26 **Q. How does customer density affect vegetation management costs and timelines of cycle
27 work performed in urban areas versus rural areas?**

28 A. Rural customers tend to be spread out over large areas, with a few homes per block versus
29 urban areas which can have dozens of homes per block. Clearing vegetation in rural areas
30 is generally simpler because of less obstructions and interactions needed with landowners.

1 Vegetation management tools such as herbicides and growth regulators can be used more
2 readily in rural areas than urban areas. Depending on the circuits being addressed each
3 year, the amount of vegetation management expense will vary. Increased customer density
4 in urban or city areas affects the Company's annual expenses for vegetation management
5 in several ways.

6 First, the ability to access Company equipment will increase the variability in these
7 costs. In urban areas, the Company has more facilities to serve customers and less space
8 to maneuver repair equipment. Often a special "climbing crew" is required versus a bucket
9 crew to safely remove vegetation. Specially trained climbing crews must physically climb
10 trees avoiding electrical hazards, rope off branches and safely lower limbs while avoiding
11 damage to customer property and injury to people. In rural or open areas, a bucket crew
12 can safely work from a bucket, directly access branches, and address trees without fear of
13 damage to property or others. Additionally, in busy urban areas, traffic control must be
14 deployed to safely route vehicles and provide barricades to protect workers. Second, there
15 is additional time, planning, and safety involved with removal of customer fences and
16 outbuildings, as well as pets and other hazards. These complicating issues can increase the
17 cost and scope of projects in urban areas versus rural areas. Third, partnering with our
18 customers to coordinate the preservation of landscaping and other improvements during
19 the vegetation work increases in urban versus rural areas.

20 Fourth, the presence of unmovable encroachments such as decking, pools, shops,
21 and large buildings in customers' backyards hinders safe access to OG&E equipment with
22 bucket and vegetation access equipment. When they arise, these situations often require a
23 detailed plan of action to safely address alternate approaches and paths for the heavy
24 equipment to gain access for safe work practices.

25 Finally, when homeowners object to allowing any access or use of their property
26 for access to OG&E equipment, this can cause delays and increased costs that contributes
27 to the variability of the expense. Some homeowners also object and seek legal action to
28 prevent pruning of trees and vegetation encroaching Company facilities. Each of these
29 scenarios tend to occur more often in cities and urban areas than in rural areas, which
30 increase overall vegetation management costs.

1 Q. **What are some of the other vegetation management practices that OG&E uses besides**
2 **trimming and vegetation removals?**

3 A. As explained above, OG&E is using a variety of tools to manage vegetation on the system.
4 One of the tools the Company is utilizing are growth regulators, which slow down the
5 recovery of growth on trees trimmed by crews. By applying a horticultural product to
6 newly trimmed trees, the regrowth can be slowed to reduce future impacts to the system.
7 Trees will naturally produce new growth where the trimming has occurred, and
8 horticultural product helps slow the regrowth. Another tool is the use of herbicides to
9 directly address vegetation impacting electrical infrastructure, and herbicides are a
10 desirable choice in rural areas where many miles of vegetation can be managed with
11 reduced costs. Growth regulators and herbicides are an important tool, but they are not as
12 effective as trimming and removal of vegetation.

13

14 Q. **Is OG&E looking at any new methods in its vegetation management program?**

15 A. Yes. The Company is also piloting new satellite and machine learning technology to
16 objectively measure and analyze the Company's system. Satellite technology helps inform
17 the vegetation management program based on a defensible understanding of areas with
18 greatest risks, vegetation encroachments, growth rates exceeding trim distances, and trees
19 that are outside of right of ways that pose hazards to the system. Satellite information can
20 produce feedback on the performance of the planned work leading to better understandings
21 of the optimal trim distances, growth patterns, identify hazard trees, measure herbicide
22 effectiveness, and understand contractor performance. With this innovative technology,
23 OG&E can plan vegetation management years in advance while becoming more
24 situationally aware of vegetation induced risks on the system. OG&E is hopeful that this
25 new technology will allow the Company to deploy its various vegetation management
26 techniques with more awareness and effectiveness.

27 This new satellite technology allows OG&E to gain awareness of real-time
28 vegetation management needs rather than sending members into the field to assess and
29 record current conditions. The satellite imagery can be flown and analyzed for up to 10,000
30 circuit miles over several weeks versus several months for many foresters to visit each

1 location and develop a work plan. This new tool creates a consistent data driven approach
2 to measuring and planning on the system. The added information will give the Company's
3 experts the ability to plan each circuit more efficiently, measure progress effectiveness, and
4 address higher priority areas in a faster manner. The entire system can be captured via
5 satellite leading to a better overall multiyear planning horizon for vegetation management.
6 Additionally, OG&E foresees a future opportunity to utilize this information via a decision
7 matrix for considering whether to convert overhead construction to underground or covered
8 cable conversions versus continued future vegetation management expenses. Given this
9 new satellite technology and analytics, OG&E can create an informed and efficient plan to
10 address immediate and planned cycle needs as well as risks to the system.

11
12 **Q. Why does OG&E need to budget specifically for customer requests for vegetation**
13 **work?**

14 **A.** OG&E believes it is important to consider customer's requests for vegetation management
15 in and around shared spaces. Removing vegetation near energized lines requires specially
16 trained and certified crews that have the authority to perform work within the minimum
17 approach distances of these energized lines. Additionally, from January through November
18 2023, customers have requested OG&E assistance with over 8,000 tickets or requests. The
19 work typically requires certified and special planning, climbing crews, and working around
20 customer property obstructions and energized lines. Due to the complex nature of this
21 work, each work location can cost between \$1000 to \$4500 to remediate. With nearly
22 9,000 expected customer requests by the end of 2023, the cost to address these concerns
23 can vary considerably. These customer requests also take away from budgeted dollars for
24 other vegetation management activities.

25
26 **Q. What are your recommendations to this Commission about the Company's next steps**
27 **in its vegetation management program?**

28 **A.** OG&E seeks two actions related to its vegetation management program: (i) authorizing for
29 a larger expense level for its vegetation management activities; and (ii) approval of a
30 tracker mechanism to account for variations in Vegetation Management costs, as discussed

1 in the Direct Testimony of witness Jason Thenmadathil. As discussed above, this increased
2 expense level is necessary given the increased costs caused by inflation and increased
3 demand for vegetation management services. The tracker mechanism will capture the
4 variability of costs in between rate reviews and allow the exact costs of vegetation
5 management to be fully reviewed in the next general rate case. I recommend the
6 Commission approve an increase to base vegetation expense and approve the Company's
7 requested vegetation management expense tracker.

8

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

10 A. Yes.

