

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)
RATES, CHARGES, AND TARIFFS FOR RETAIL)
ELECTRIC SERVICE IN OKLAHOMA)

CAUSE NO. PUD 201700496

FILED
MAY 02 2018

COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

RESPONSIVE TESTIMONY

OF

TODD F. BOHRMANN

ON BEHALF OF

MIKE HUNTER,

OKLAHOMA ATTORNEY GENERAL

May 2, 2018

TABLE OF CONTENTS

I. INTRODUCTION	3
II. PURPOSE	4
III. BACKGROUND.....	5
IV. SOONER PLANT DRY SCRUBBERS	6
V. QUALITY OF SERVICE	9
1. RELIABILITY	9
2. CUSTOMER SATISFACTION.....	15
3. REGULATORY REMEDY	19
VII. COMPETITIVE BIDDING.....	20
VIII. RATE CASE EXPENSE.....	31
IX. SUMMARY AND CONCLUSION.....	33

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME.

A. My name is Todd F. Bohrmann.

Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR BUSINESS ADDRESS?

A. I am employed as a Regulatory Analyst by the Office of the Attorney General of Oklahoma ("Attorney General"). My business address is 313 NE 21st Street, Oklahoma City, Oklahoma 73105.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I graduated from the University of Central Florida in Orlando, Florida with a Bachelor of Arts degree in Economics with honors and a Master of Business Administration degree. I was on the staff of the Florida Public Service Commission in several analyst positions from 1994 to 2006. I worked as an independent consultant on various utility regulatory matters from 2006 to 2008. I was employed at CSX Transportation as an economist from 2006 to 2016. I was employed by Acadian Consulting Group as an analyst from 2016 to 2017. I have been employed by the Attorney General since 2017 as a regulatory analyst in the Utility Regulation Unit. I have attached my curriculum vita as Exhibit TFB-1.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THE OKLAHOMA CORPORATION COMMISSION?

A. Yes, I have. I filed responsive testimony on behalf of the Attorney General in prior proceedings before the Oklahoma Corporation Commission ("Commission") as detailed in Exhibit TFB-1. My credentials have previously been accepted.

II. PURPOSE

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CAUSE?

A. The purpose of my testimony is to recommend that the Commission take the following action regarding Oklahoma Gas and Electric Company's ("OGE" or "Company") application for a \$517,000 annual increase in the Company's base rate revenues:

- 1) Deny the Company's request for a regulatory asset associated with the dry flue gas desulfurization systems ("dry scrubbers") at its Sooner Plant from the commercial in-service date to the effective date of base rates implemented in OGE's next base case;
- 2) Impose a 25 basis point downward adjustment on the rate of return on common equity until the Company satisfies the following criteria:
 - a) The Company meets its 2017 target of 114 minutes for its System Average Interruption Duration Index ("SAIDI");
 - b) The Company's year-over-year change in the scores from JD Power's annual residential surveys is greater than the median year-over-year improvement for the U.S. South Large electric utility cohort; and
 - c) The Company's year-over-year change in the scores from JD Power's annual business surveys is greater than the median year-over-year improvement for the U.S. South Large electric utility cohort;
- 3) Recommend that the Commission signal strongly its expectation for an open, fair, competitive bidding process for generation resource additions; and
- 4) Disallow the costs associated with the testimony and appearance of Russell R. Evans, Ph.D., on behalf of the Company.

III. BACKGROUND

Q. PLEASE DESCRIBE OGE’S RETAIL SERVICE AREA.

A. In 2017, OGE provided retail electric service in Oklahoma to approximately 770,000 customers with approximately 85 percent of these customers classified as residential. OGE serves central Oklahoma to the north and south borders with Kansas and Texas as well as portions of eastern and western Oklahoma, including the Enid and Oklahoma City metropolitan statistical areas (“MSA”). Based on my calculations using OGE’s records, these two MSAs account for over 70 percent of the Company’s residential customers, but less than 50 percent of OGE’s ad valorem property tax payments are paid to counties within these MSAs.

Q. HOW DOES OGE’S RETAIL CUSTOMER RATES COMPARE WITH THE NATIONAL AVERAGE?

A. The Company characterizes its rates as “well below the national average.”¹ However, the Company’s revenue per residential customer was just slightly less than the national median for 82 large investor-owned electric utilities in 2017. Among these utilities, OGE’s revenue per industrial customer was also nearly three times larger than the median.²

Q. HOW DOES OGE’S RELIABILITY AND CUSTOMER SATISFACTION COMPARE WITH ITS PEERS?

A. OGE indicates that the Company “offers electric service that is highly reliable and has customers who repeatedly rank the Company as the best in the region and among the best

¹ Direct Test. of Donald R. Rowlett on Behalf of Oklahoma Gas and Electric Co. 26:3–5 (Jan. 16, 2018) [hereinafter “Rowlett Direct”].

² *Electric Power Sales, Revenue, and Energy Efficiency Form EIA-861 Detailed Data*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/electricity/data/eia861/> (last visited Apr. 24, 2018).

1 in the nation.”³ This characterization may have been valid several years ago, but, as
2 discussed in further detail below, the Company’s reliability and customer service have
3 degraded considerably in recent years compared with its peers.

4 **Q. HOW HAS THE OKLAHOMA ECONOMY PERFORMED OVER THE PAST**
5 **FIVE YEARS?**

6 A. The Oklahoma economy—specifically the Enid, Oklahoma and Oklahoma City, Oklahoma
7 MSAs—has been decelerating in recent years, from strong growth to very tepid growth
8 since 2012. As shown in Exhibit TFB-2, year-over-year percent change in economic output
9 (economic growth) for Oklahoma has fallen from 5.6 percent in 2012 to -2.3 percent in
10 2016. In 2016, Oklahoma ranked 48th among the 50 states and the District of Columbia in
11 GDP per capita growth. In the Enid, Oklahoma MSA, Gross Domestic Product (“GDP”)
12 per capita has decelerated rapidly from 3.7 percent annually in the ten years ending 2015
13 to marginally negative growth since. In the Oklahoma City, Oklahoma MSA, GDP per
14 capita has increased by less than one percent annually since 2006, and fell by 3.4 percent
15 in 2016. The Enid and Oklahoma City MSAs ranked 248th and 359th, respectively, out of
16 382 MSAs nationwide in GDP per capita growth in 2016. This deceleration in economic
17 growth coincided with a 50 percent drop in crude oil prices.

18 **IV. SOONER PLANT DRY SCRUBBERS**

19 **Q. PLEASE DESCRIBE THE COMPANY’S SOONER PLANT.**

20 A. The Company’s Sooner Plant, located near Red Rock, Oklahoma, is comprised of two coal-
21 fired steam generating units with a combined summer capacity of 1,041 megawatts
22 (“MW”). Sooner Unit 1 entered commercial service in 1979, while Sooner Unit 2 followed

³ Rowlett Direct 26:3–5.

one year later.⁴ In 2016, the Sooner Plant burned approximately 2.5 million tons of rail-delivered Powder River Basin coal from Wyoming. The Sooner Plant operated at a 44 percent capacity factor and had a heat rate efficiency of 10,700 Btu/kwh.⁵ These operating characteristics are within a reasonable range given the two units' size and vintage.

Q. IS OGE CURRENTLY INSTALLING ENVIRONMENTAL COMPLIANCE ASSETS AT ITS SOONER PLANT?

A. Yes. The Company is installing dry scrubbers to meet the requirements of the U.S. Environmental Protection Agency's ("EPA") Federal Implementation Plan ("FIP") relating to SO₂ emission limits at the Sooner Plant. The compliance deadline is January 4, 2019.⁶

Q. WHAT ACTIONS HAS OGE ASKED THE COMMISSION TO CONSIDER REGARDING THE COMPANY'S SOONER PLANT IN THIS PROCEEDING?

A. The Company has asked for a deferred accounting treatment for the environmental compliance assets and operating costs of the dry scrubbers at Sooner Units 1 and 2, which are expected to be placed into commercial service by year-end 2018. OGE requests the ability to accrue a regulatory asset that would consist of the non-fuel operating and maintenance expenses and the ad valorem property taxes as well as a return of, and on, the scrubber assets. If approved, this regulatory asset would have no impact on the Company's

⁴ *Form EIA-860 Detailed Data*, U.S. Energy Information Administration, <https://www.eia.gov/electricity/data/eia860/> (last visited Apr. 24, 2018).

⁵ *Form EIA-923 Detailed Data*, U.S. Energy Information Administration, <https://www.eia.gov/electricity/data/eia923/> (last visited Apr. 24, 2018).

⁶ Direct Test. of Usha-Maria Turner on Behalf of Oklahoma Gas and Electric Co. 3:6–9, Chart 1, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm'n Aug. 6, 2014).

1 base rates until the following rate case.⁷ The Company is expected to file its next rate case
2 by year-end 2018.⁸

3 **Q. IS OGE'S REQUEST TO CREATE A REGULATORY ASSET FOR THE SOONER**
4 **PLANT DRY SCRUBBERS APPROPRIATE AT THIS TIME?**

5 A. No. In an earlier proceeding, the Company indicated that OGE "is not seeking and will not
6 seek any kind of cost recovery until the [Sooner Plant dry] scrubber project is completed
7 and placed into [commercial] service."⁹ Although a regulatory asset would not impact its
8 base rates until the next rate case,¹⁰ the creation of a regulatory asset places upward pressure
9 on the Company's base rates for future customers.

10 **Q. HAS OGE PROVIDED SUBSTANTIAL INFORMATION REGARDING THE**
11 **COST AND PERFORMANCE OF THE SOONER PLANT'S DRY SCRUBBERS**
12 **FOR THE COMMISSION TO MAKE A DECISION REGARDING THE ITS**
13 **PRUDENCE AT THIS TIME?**

14 A. No. In support of its request for a regulatory asset for the Sooner Plant dry scrubbers, OGE
15 has dedicated only 18 *lines* of testimony from one witness out of the 19 witnesses who
16 collectively filed hundreds of pages of testimony in this proceeding.¹¹ In contrast, five OGE
17 witnesses testified either primarily or completely about the prudence of the Company's

⁷ Rowlett Direct 22:30–23:14.

⁸ Oklahoma Gas and Electric Company, "OGE Investor Update" 19 (Mar. 8, 2018), attached as Ex. TFB-3.

⁹ Direct Test. of Donald R. Rowlett on Behalf of Oklahoma Gas and Electric Co. 7:14–16, *Okla. Gas & Elec. Co. Plan to Install Dry Scrubbers at the Sooner Generating Facility*, No. PUD 201600059 (Feb. 12, 2016) [hereinafter "Rowlett Sooner Dry Scrubbers Test."].

¹⁰ Rowlett Direct 23:13–14.

¹¹ See Rowlett Direct 22:30–23:14.

1 Mustang Modernization Plan (“Mustang Plan”).¹² In addition, the Mustang Plan was
2 referenced tangentially by three more OGE witnesses.¹³

3 **Q. WHEN IS THE APPROPRIATE TIMING FOR THE COMMISSION TO**
4 **APPROVE THE INCLUSION OF THE SOONER PLANT DRY SCRUBBERS IN**
5 **OGE’S RATE BASE?**

6 A. Consistent with traditional regulatory theory¹⁴ and OGE’s prior commitment,¹⁵ the
7 Company may seek to recover its investment in and expenses associated with the dry
8 scrubbers after they have been placed into commercial service. As stated previously, these
9 dry scrubbers are expected to be placed into commercial service by year-end 2018, beyond
10 the six month post-test year period.

11 **V. QUALITY OF SERVICE**

12 **1. RELIABILITY**

13 **Q. WHY IS RELIABILITY AN INTEGRAL COMPONENT OF A UTILITY’S**
14 **QUALITY OF SERVICE?**

15 A. An electric utility’s core objectives are to operate its system in a safe and reliable manner
16 at the lowest reasonable cost. Each utility within the Commission’s jurisdiction is directed
17 to design and maintain a reliability program to limit the frequency and duration of electric

¹² See Direct Test. of Robert J. Burch on Behalf of Oklahoma Gas and Electric Co. (Jan. 16, 2018) [hereinafter “Burch Direct”]; Direct Test. of Gregory McAuley on Behalf of Oklahoma Gas and Electric Co. (Jan. 16, 2018) [hereinafter “McAuley Direct”]; Direct Test. of Leon Howell on Behalf of Oklahoma Gas and Electric Co. (Jan. 16, 2018) [hereinafter “Howell Direct”]; Direct Test. of Lanny Nickell on Behalf of Oklahoma Gas and Electric Co. (Jan. 16, 2018) [hereinafter “Nickell Direct”]; Direct Test. of Phillip Webster on Behalf of Oklahoma Gas and Electric Co. (Jan. 16, 2018).

¹³ Rowlett Direct 7:11–11:15; Direct Testimony of John Spanos on Behalf of Oklahoma Gas and Electric Co. 29:5–30 (Jan. 16, 2018); Direct Testimony of Jeffery Kopp on Behalf of Oklahoma Gas and Electric Co., Ex. JTK-1, at 4–7 (Jan. 16, 2018).

¹⁴ Charles F. Phillips, Jr., *The Regulation of Public Utilities* 171 (3d ed. 1993).

¹⁵ Rowlett Sooner Dry Scrubbers Test. 7:14–16.

1 service interruptions, to the maximum extent possible, and to maintain acceptable electric
2 service reliability levels over time.¹⁶ More importantly, a reliable electricity supply is vital
3 to power today's households and businesses. In households, the temporary loss of
4 electricity can lead to life-endangering conditions, reduced value of leisure time, spoiled
5 perishable goods, reduced quality of life, and an unexpected and unwanted diversion from
6 routine. For businesses, the loss of power can lead to missed transactions, idle workers,
7 damaged equipment, additional labor costs after restoration of service, and spoiled or
8 damaged product.

9 **Q. WHAT IS THE SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX**
10 **(“SAIFI”)?**

11 A. The System Average Interruption Frequency Index (“SAIFI”) represents the frequency of
12 interruptions that a customer experienced during a specific time interval (*i.e.*, year). The
13 formula for calculating a utility's SAIFI is the following:

$$SAIFI = \frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

14
15 A higher SAIFI value represents a utility system that is prone to more frequent loss,
16 regardless of the total duration, of electric service during the time interval.

17 **Q. WHAT IS THE SYSTEM AVERAGE INTERRUPTION DURATION INDEX**
18 **(“SAIDI”)?**

19 A. The System Average Interruption Duration Index (“SAIDI”) represents the duration of all
20 interruptions that a customer experienced during a specific time interval (*i.e.*, year). The
21 formula for calculating a utility's SAIDI is the following:

¹⁶ OAC 165:35-25-14.

$$SAIDI = \frac{\text{Total Duration of Customer Interruptions}}{\text{Total Number of Customers Served}}$$

A higher SAIDI value represents a utility system that is prone to experience a longer loss, regardless of the frequency, of electric service during the time interval.

Q. DOES WEATHER PLAY A ROLE IN THE COMPANY'S RELIABILITY PERFORMANCE?

A. Based on wind, lightning, and ice events, OGE asserts that Oklahoma City receives the most severe weather among 13 medium to large cities located in the eastern two-thirds of the continental United States.¹⁷ The Company attributes weather as the primary cause of 35 percent of the outages during 2016, followed by equipment failure (24 percent), animals (18 percent), and trees (14 percent).¹⁸ Due to the weather's impact on reliability, I compared OGE's SAIDI and SAIFI data with Public Service Company of Oklahoma ("PSO") and three municipal utilities located within or near the Company's service area – the cities of Edmond, Ponca City, and Stillwater. I have also excluded major events from the reliability data to compare how the Company distribution system compares *vis-à-vis* its Oklahoma peers under routine or "blue-sky" conditions.

Q. DURING 2015 AND 2016, HOW DID OGE COMPARE WITH PSO AND THESE THREE MUNICIPAL UTILITIES WITH RESPECT TO SAIDI?

A. As shown in Exhibit TFB-5, page 1 of 4, OGE's SAIDI values for 2015 and 2016 were substantially worse than those of PSO and the three municipal utilities. Furthermore, the SAIDI values for the three OGE operating districts closest to Edmond (i.e., Metro East,

¹⁷ OGE Response to AG-OGE-12-12, Reliability Conversation Presentation 20180128, at 5, attached as Ex. TFB-4.

¹⁸ *Id.* at 6.

1 Metro North, and Metro West) are only marginally better than the Company-wide SAIDI
2 2015 and 2016 values. OGE's Enid district was within 15 percent of Ponca City in 2015,
3 but the gap grew considerably larger in 2016. By 2016, customers in OGE's Enid district
4 experienced total outage duration that was nearly four times longer than that experienced
5 by Ponca City's and Stillwater's customers.

6 **Q. HOW DID THE 2017 SAIDI VALUE COMPARE WITH OGE'S EXPECTATIONS?**

7 A. Among OGE's key performance indicators, the Company had set a SAIDI target of 114
8 minutes for 2017.¹⁹ OGE's actual 2017 SAIDI value (excluding major events) was 144
9 minutes, or 26 percent higher than target. Moreover, only 8 of the 26 OGE operating
10 districts had a SAIDI value that met the SAIDI target. Also, OGE did not meet the historical
11 average of 138 minutes that the Commission established as the base performance level.²⁰

12 **Q. DURING 2015 AND 2016, HOW DID OGE COMPARE WITH PSO AND THESE**
13 **THREE MUNICIPAL UTILITIES WITH RESPECT TO SAIFI?**

14 A. As shown in Exhibit TFB-5, page 2 of 4, OGE's SAIFI values for 2015 and 2016 set the
15 median among itself, PSO, and the three municipal utilities. However, the SAIFI values
16 for the three OGE operating districts closest to Edmond were worse than Edmond's
17 corresponding SAIFI values. OGE's Enid district had a lower SAIFI value than Ponca City
18 in 2015, but slipped to near parity with both Ponca City and Stillwater in 2016.

19 **Q. DOES THE COMPANY TRACK ITS 50 WORST PERFORMING CIRCUITS ON**
20 **ANNUAL BASIS?**

¹⁹ OGE Response to AG-OGE-12-12, TD Ops Officer Business Review December 2017, at 1, attached as Ex. TFB-6.

²⁰ OGE Response to AG-OGE-12-12, OGE Annual Reliability Report, at 2, 4, attached as Ex. TFB-7.

1 A. Yes. Each year, the Company submits data in a reliability report to the Commission on its
2 50 worst performing circuits among the 1,000 circuits in its distribution system.²¹ OGE
3 provides data regarding the number of customers on each circuit, as well as the SAIDI and
4 SAIFI for customers on each circuit. OGE also provides further identifying information by
5 providing the substation and operating district associated with each circuit.

6 **Q. DURING THE MOST RECENT FIVE YEARS, HOW MANY CIRCUITS HAVE**
7 **APPEARED ON THE “50 WORST PERFORMING LIST” ON MORE THAN ONE**
8 **OCCASION?**

9 A. As Exhibit TFB-5 page 3 of 4, indicates, 56 circuits have appeared on the Company’s
10 annual 50 worst performing circuit list on more than one occasion since 2013. Four circuits
11 have appeared on this list four of the past five years. The odds of a single circuit randomly
12 appearing on this list four out of five years is nearly 170,000 to 1.

13 **Q. IS IT POSSIBLE TO PLACE A VALUE ON THE SERVICE INTERRUPTIONS**
14 **THAT AN ELECTRIC UTILITY CAUSES ITS CUSTOMERS?**

15 A. Yes. The U.S. Department of Energy (“DOE”) has developed a model to estimate the value
16 of service reliability for U.S. electricity consumers. The data that DOE incorporates into
17 its model is comprised from surveys by 10 different utility companies between 1989 and
18 2012. The model can estimate the interruption cost by duration on an event, demand, and
19 unserved energy basis for residential, commercial, and industrial customers. For residential
20 customers, interruption costs are a function of annual energy consumption, length of
21 interruption, household income, presence of medical equipment, presence of backup

²¹ *Id.* at 8; *see also* OAC 165:35-25-19, 20(b)(5).

1 generation, summer binary variable, weekday binary variable, number of outages in most
2 recent 12 months, age of residents within household, time of day, and type of residence.
3 For commercial and industrial customers with less than 50,000 kwh in annual electricity
4 consumption, interruption costs are a function of annual electricity consumption, length of
5 interruption, summer binary variable, industry, presence of backup generation, and time of
6 day. For commercial and industrial customers with 50,000 kwh or more in annual
7 electricity consumption, interruption costs are a function of annual electricity consumption,
8 length of interruption, summer binary variable, and industry.²² The DOE model has been
9 cited in numerous reports and publications as a reasonable method to value electricity
10 outages.²³

11 **Q. ACCORDING TO THE DOE MODEL, WHAT IS THE ESTIMATED**
12 **DIFFERENCE IN VALUE BETWEEN OGE'S TARGET SAIFI AND SAIDI**
13 **VALUES FOR 2017 AND THE COMPANY'S ACTUAL CORRESPONDING**
14 **VALUES?**

15 **A.** As referenced earlier, the Company's actual 2017 SAIDI was over 25 percent greater than
16 the target value, while its SAIFI was approximately 13 percent less than expected. The
17 DOE model estimates the value of the Company's service interruptions with the following

²² Michael Sullivan, Josh Schellenberg & Marshall Blundell, *Updated Value of Service Reliability Estimates for Electric Utility Customers in the United States*, Ernest Orlando Lawrence Berkeley National Laboratory (Jan. 2015), available at <http://eta-publications.lbl.gov/sites/default/files/lbnl-6941e.pdf>.

²³ See, e.g., Melissa Allen et al., *Assessing The Costs and Benefits of Resilience Investments: Tennessee Valley Authority Case Study*, Oak Ridge National Laboratory (Jan. 2017), available at <https://info.ornl.gov/sites/publications/Files/Pub72433.pdf>; M. Kintner-Meyer et al., *Valuation of Electric Power Systems Services and Technologies*, Pacific Northwest National Laboratory (Aug. 2016), available at https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-25633.pdf; Travis Simpkins et al., *Optimal Sizing of A Solar-Plus-Storage System For Utility Bill Savings and Resiliency Benefits*, National Renewable Energy Laboratories (Nov. 2016), available at <https://www.nrel.gov/docs/fy17osti/66088.pdf>.

1 inputs: 1) U.S. State; 2) Number of utility's residential customers; 3) Number of utility's
2 non-residential customers; 4) SAIDI value; and 5) SAIFI value. By holding the first three
3 inputs constant, the model estimated the difference in value of service interruptions
4 between the actual and target reliability statistics. As Exhibit TFB-5, page 4 of 4,
5 demonstrates, the DOE model estimates this difference as approximately \$27.8 million for
6 2017. With the exception of less than \$0.1 million to the residential customers, the
7 remainder is allocated 63 percent to the small commercial and industrial customers and 36
8 percent to the larger customers. With over \$3.4 billion in common equity,²⁴ this \$27.8
9 million value of service interruptions represents approximately 81 basis points on the
10 Company's cost of equity.

11 **2. CUSTOMER SATISFACTION**

12 **Q. WHAT IS THE COMPANY'S ASSESSMENT OF ITS CUSTOMERS'**
13 **SATISFACTION WITH OGE?**

14 A. The Company indicates that its customers repeatedly rank OGE as the best in the region
15 and among the best in the nation.²⁵ OGE promotes its J.D. Power and Associates 2013,
16 2014, and 2015 Electric Utility Residential Customer Satisfaction Award in investor
17 presentations.²⁶

18 **Q. DO YOU AGREE WITH THE COMPANY'S ASSESSMENT OF ITS**
19 **CUSTOMERS' SATISFACTION?**

²⁴ OGE Application Package, Supplemental Package, Section F-Capital and Cost of Money W/P F-1 (Jan. 16, 2018).

²⁵ Rowlett Direct 26:4-5.

²⁶ See, e.g., OGE Response to OIEC-OGE-1-4, Barclays CEO Energy-Power Conference, at 4, attached as Ex. TFB-8.

1 A. No. Although such recognition may have been valid several years ago, surveys from J.D.
2 Power and Associates (“J.D. Power”) on customer satisfaction from both residential and
3 business customers indicate that OGE has not kept pace with its peers among large electric
4 utilities in the U.S. South region over the past several years.

5 **Q. WHAT IS J.D. POWER?**

6 A. For nearly 50 years, J.D. Power, whose mission is “to be the premier provider of voice of
7 the customer insights utilizing best-in-class analytics and research methodologies,”²⁷
8 conducts third party interviews of customers across a wide spectrum of industries regarding
9 satisfaction with specific brands and companies. In 2017, J.D. Power gathered data
10 regarding customer satisfaction among 138 brands in the electric utility industry from
11 nearly 100,000 residential customers, according to its report.

12 **Q. HOW DID J.D. POWER DETERMINE WHICH ELECTRIC UTILITIES WERE**
13 **PART OF THE COMPANY’S PEER GROUP?**

14 A. J.D. Power classifies its “brands” for the electric utility industry into eight segments based
15 on four geographic regions and two sizes. OGE is located in the Large Utility (i.e., more
16 than 500,000 households) and the U.S. South region. Along with OGE, the following
17 electric utilities are included in this peer group, according to J.D. Power’s 2017 report:
18 Florida Power & Light, Georgia Power, Entergy Louisiana, Duke Energy Carolinas, CPS
19 Energy, Alabama Power, Dominion Virginia Power, Entergy Arkansas, Progress Energy
20 Carolinas, South Carolina Electric and Gas, Tampa Electric, and Progress Energy Florida.

²⁷ *Our Research & Analytics*, J.D. Power, <http://www.jdpower.com/about-us/our-research-and-analytics>.
(last visited Apr. 24, 2018).

1 **Q. HOW DOES J.D. POWER DETERMINE A BRAND'S CUSTOMER**
2 **SATISFACTION SCORE?**

3 A. J.D. Power calculates a brand's annual customer satisfaction score among residential
4 customers based on the average of four quarterly surveys from a subset of over 100,000
5 respondents. For business customers, J.D. Power calculates the average of two semi-annual
6 surveys from a subset of nearly 25,000 respondents. Respondents are asked to rank on a 1-
7 10 scale various elements of its customer experience with the brand over 140 questions.
8 The maximum score that a brand can achieve is 1000. J.D. Power evaluates customer
9 satisfaction among these electric utility brands based on several dimensions, such as power
10 quality and reliability, price, billing and payment, communications, corporate citizenship,
11 and customer service, according to J.D. Power's 2017 report.

12 **Q. WHY SHOULD CUSTOMER SATISFACTION MATTER TO A PROVIDER OF**
13 **RETAIL ELECTRIC UTILITY SERVICE, SUCH AS OGE?**

14 A. Although OGE does not encounter direct competition for retail electric service within a
15 specified area, the Company should always maximize its value perception to customers.
16 Price is only one of several factors that comprises the perceived value that a customer
17 receives from its interaction with OGE. Customer satisfaction, especially relative to what
18 OGE's peers achieve, can substantially impact customers' value perception. Furthermore,
19 customers' value perception has an inverse relationship with their willingness and
20 likelihood to seek available alternatives.

21 **Q. AMONG RESIDENTIAL CUSTOMERS, HOW HAS OGE'S CUSTOMER**
22 **SATISFACTION OVER THE PAST FIVE YEARS COMPARED WITH OTHER**
23 **ELECTRIC UTILITIES OF SIMILAR SIZE FROM THE U.S. SOUTH REGION?**

1 A. As shown in Exhibit TFB-9, page 1 of 2, OGE ranked highest among its peers in the U.S.
2 South region with a score of 683 in 2013. OGE overall customer satisfaction score was 26
3 points higher than its peer average. OGE rated higher than its peer average among all the
4 dimensions that comprise the overall score, and rated highest in its peer group on four of
5 the six dimensions. By 2017, the Company's overall customer satisfaction score had
6 increased to 737. However, this 54 point improvement did not keep pace with its peer
7 group. Instead, the Company ranked sixth, not first, among its 13 peers, and its score was
8 slightly less than the peer average. Also, the Company scored below its peer average on
9 dimensions such as power quality and reliability and customer service.

10 **Q. HOW DID OGE'S 54 POINT IMPROVEMENT COMPARE WITH**
11 **IMPROVEMENTS WITHIN ITS PEER GROUP OVER THE SAME PERIOD?**

12 A. Among the 13 electric utilities in its peer group, OGE's 54 point improvement was the
13 worst performance over this period. As shown in Exhibit TFB-9, page 1 of 2, the average
14 improvement was 81 points with three utilities improving their respective scores by more
15 than 90 points.

16 **Q. AMONG BUSINESS CUSTOMERS, HOW HAS OGE'S CUSTOMER**
17 **SATISFACTION OVER THE PAST FOUR YEARS COMPARED WITH OTHER**
18 **ELECTRIC UTILITIES OF SIMILAR SIZE FROM THE U.S. SOUTH REGION?**

19 A. As shown in Exhibit TFB-9, page 2 of 2, OGE ranked third highest among its peers in the
20 U.S. South region with a score of 692 in 2014. OGE overall customer satisfaction score
21 was 14 points higher than its peer average. OGE rated higher than its peer average among
22 all, but one, of the dimensions that comprise the overall score, and rated no worse than
23 third highest in its peer group on five of the six dimensions. By 2017, the Company's

1 overall customer satisfaction score had increased to 759. However, this 67 point
2 improvement had failed to keep pace with its peer group. Instead, the Company ranked last
3 among its 11 peers, and its score was 24 points less than the peer average. Also, the
4 Company scored below its peer average on six dimensions, and ranked last on the billing
5 and payment and communications dimensions.

6 **Q. HOW DID OGE'S 67 POINT IMPROVEMENT COMPARE WITH**
7 **IMPROVEMENTS WITHIN ITS PEER GROUP OVER THE SAME PERIOD?**

8 A. Among the 11 electric utilities in its peer group, OGE's 67 point improvement was the
9 worst performance over this period. As shown in Exhibit TFB-9, page 2 of 2, the average
10 improvement was 105 points with four utilities improving their respective scores by more
11 than 115 points.

12 **3. REGULATORY REMEDY**

13 **Q. GIVEN ITS ROLE AS A PROXY FOR A COMPETITIVE ENVIRONMENT, IS IT**
14 **APPROPRIATE FOR THE COMMISSION TO IMPOSE A REGULATORY**
15 **REMEDY IN RESPONSE TO THE DECREASE IN THE COMPANY'S QUALITY**
16 **OF SERVICE?**

17 A. Yes. In competitive environments, firms rise and fall on their ability to respond timely and
18 appropriately to customer feedback. A drop in a firm's quality of service can result in a
19 reinforcing cycles of volume-revenue-earnings declines until decisive action is taken.
20 Responsive firms arrest these reinforcing cycles quickly with minimal volume, revenue,
21 and earnings erosion. However, when customers lack sufficient viable alternatives, firms
22 may not act quickly enough, if at all, to address these concerns. Acting in its role as a proxy
23 for direct competition, a rate case proceeding is the most appropriate forum for the

1 Commission to provide feedback to the Company regarding its recent poor quality of
2 service relative to its peers.

3 **Q. GIVEN THE COMPANY'S RECENT PERFORMANCE ON DISTRIBUTION**
4 **RELIABILITY AND CUSTOMER SATISFACTION, WHAT IS THE**
5 **APPROPRIATE REGULATORY REMEDY FOR THE COMMISSION TO TAKE**
6 **AT THIS TIME?**

7 A. I recommend that the Commission impose a 25 basis point penalty on the rate of return on
8 common equity until the Company satisfies the following criteria: a) The Company meets
9 its 2017 target of 114 minutes for SAIDI; b) The Company's year-over-year change in its
10 score from JD Power's annual residential survey is greater than the median year-over-year
11 improvement for the U.S. South Large electric utility cohort; and c) The Company's year-
12 over-year change in its score from JD Power's annual business survey is greater than the
13 median year-over-year improvement for the U.S. South Large electric utility cohort. This
14 25 basis point penalty is equivalent to approximately \$8 million in revenue requirements.

15 **VII. COMPETITIVE BIDDING**

16 **Q. PLEASE DESCRIBE THE COMPANY'S MUSTANG ENERGY CENTER.**

17 A. Prior to 2016, OGE's Mustang Energy Center, located in Canadian County, Oklahoma,
18 was comprised of four natural gas-fired steam turbine units with a summer capacity of 475
19 MW. In 2015, these four Mustang units generated nearly 115,000 megawatt-hours
20 ("MWh") of electrical energy for a capacity factor less than three percent. These units
21 consumed approximately 1,295 billion cubic feet of natural gas to generate electricity at a

1 rate of 11,721 Btu per kwh. The Company retired Units 1 and 2 in 2015, and Units 3 and
2 4 in 2017.²⁸

3 **Q. HOW DO MUSTANG UNITS 1 and 2 COMPARE WITH UNITS OF SIMILAR**
4 **TECHNOLOGY, SIZE AND VINTAGE?**

5 A. As Exhibit TFB-10, page 1 of 3, indicates, U.S. electric utilities reported 72 natural gas-
6 fired steam turbine units constructed prior to 1960 with a nameplate capacity between 50
7 MW to 100 MW. As of 2016, 42 units with a combined summer capacity of 2,706 MW
8 had been retired. However, there are 30 units, either in operation or standby status, with a
9 combined capacity of 1,828 MW. Furthermore, there are 22 of these 30 units with a
10 combined capacity of 1,288 MW in operation with no retirement date announced.

11 **Q. HOW DO MUSTANG UNITS 3 and 4 COMPARE WITH UNITS OF SIMILAR**
12 **TECHNOLOGY, SIZE AND VINTAGE?**

13 A. As Exhibit TFB-10, page 2 of 3, indicates, U.S. electric utilities reported 17 natural gas-
14 fired steam turbine units constructed prior to 1960 with a nameplate capacity either
15 between 125 MW to 150 MW or between 240 MW to 270 MW. Among units comparable
16 to Mustang Units 3 and 4, there are only three such units currently in operation: two units
17 at the McMeekin Plant in South Carolina and one unit at the Gadsby Plant in Utah. These
18 three units have a combined summer capacity of 355 MW with an average age greater than
19 60 years. The remaining 14 units with a combined summer capacity of 2,415 MW have
20 been retired.

²⁸ *Form EIA-860 Detailed Data*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/electricity/data/eia860/> (last visited Apr. 24, 2018); *Form EIA-923 Detailed Data*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/electricity/data/eia923/> (last visited Apr. 24, 2018).

1 **Q. PLEASE DESCRIBE THE MUSTANG MODERNIZATION PROJECT.**

2 A. OGE is the first retail electric utility in the U.S. to install and operate this specific type of
3 aero-derivative combustion turbine (“CT”) unit. It can be characterized as a jet engine
4 which never leaves the ground. OGE believes these aero-derivative CT units will create
5 value for itself and its customers through its multiple starts per day, a 10 minute start
6 capability, reliable operations, low operation and maintenance costs, and low emissions.²⁹
7 The Mustang Modernization Project consists of seven such units with a combined
8 nameplate capacity of 462 MW.³⁰ A New Jersey merchant plant, Bayonne Energy Center,
9 has employed this specific technology since 2012.

10 **Q. HOW HAS THE BAYONNE ENERGY CENTER OPERATED SINCE IT OPENED**
11 **IN 2012?**

12 A. The Bayonne Energy Center has eight CT units with a combined nameplate capacity of
13 512 MW. Since 2013, these units have had an availability factor greater than 99 percent,³¹
14 a capacity factor greater than 25 percent, and a heat rate of approximately 9,780 Btu/kwh.
15 In contrast to the older Mustang steam units, the Bayonne units are 14 percent more
16 efficient and dispatched three times more frequently. Refer to Exhibit TFB-10, page 3 of
17 3, for more information.

18 **Q. WHAT IS AN INTEGRATED RESOURCE PLAN?**

19 A. An integrated resource plan (“IRP”) is a document which describes the array of demand-
20 side and supply-side technologies available to the utility to meet its obligations to provide

²⁹ Burch Direct 21:22–26.

³⁰ Burch Direct 22:7–9.

³¹ Burch Direct 26:31–27:5.

1 safe, reliable, cost-effective retail electric service. An IRP often includes a demand and
2 energy forecast, a list of existing supply-side resources as well as known retirements, an
3 assessment of transmission capabilities and needs for the forecast horizon, a description of
4 potential supply- and demand-side resources available to the utility, and a fuel procurement
5 plan. Oklahoma jurisdictional electric utilities must file an IRP with the Commission at
6 least every three years, and provide updates when material planning assumptions change.³²

7 **Q. BASED ON YOUR EXPERIENCE, DOES AN IRP REVIEW BY A PUBLIC**
8 **UTILITY COMMISSION LACK THE FEATURES OF A FORMAL**
9 **PROCEEDING?**

10 A. Yes. The IRP is not sponsored by an expert witness as sworn testimony. Although
11 stakeholders and the public utility commission ("PUC") may ask questions and submit
12 comments, the IRP is neither subject to cross-examination nor is responsive testimony
13 filed. Furthermore, the PUC does not take any formal action. Finally, the jurisdictional
14 utility is neither bound by the IRP's contents nor should it rely upon the IRP alone as
15 justification for a specific course of action. The IRP is a planning document to inform the
16 PUC, stakeholders, and the general public how and when an electric utility expects to meet
17 its future capacity needs.

18 **Q. IS THERE ANY PART OF THE COMPANY'S GENERATION EXPANSION**
19 **PLAN WITHIN ITS 2014 IRP UPDATE THAT IS NOT CONSISTENT WITH THE**
20 **ACTUAL OUTCOME?**

³² OAC 165:35-37-4.

1 A. Yes. As shown in the 2014 IRP update, the Company's most immediate capacity need is
2 driven by its decision to retire Mustang Units 1 through 4 by 2017.³³ The 2014 IRP update
3 states the "Spread CT" generation expansion plan is most cost-effective compared with the
4 "CC" option and the "CT" option. The "Spread CT" option contemplated 280 MW of CT
5 capacity in 2018 and 120 MW of CT capacity in 2019.³⁴ However, OGE later chose to
6 build 462 MW (*i.e.*, seven units at 66-Mw each) of CT capacity by 2018.

7 **Q. ON WHAT BASIS DOES OGE CONCLUDE THAT LOCATING SEVEN 66 MW**
8 **CT UNITS AT ITS MUSTANG ENERGY CENTER WAS A PRUDENT**
9 **DECISION?**

10 A. The Company provides several reasons for its decision to locate the seven 66 MW CT units
11 at its Mustang Energy Center, such as an existing location,³⁵ quick start capability,³⁶ and
12 reliability.³⁷ However, one aspect of its decision that should be problematic for the
13 Commission is the Company's exclusive reliance on its market knowledge that no
14 alternatives, except for its self-build option, existed to fill OGE's capacity need.³⁸ The
15 Company did not conduct any competitive bidding process to determine whether a proposal
16 with an alternative technology, location, or timing of incremental capacity resources could

³³ Howell Direct, Ex. LCH-1, at 28, 39 (Table 17); Rebuttal Test. of Leon Howell on Behalf of Oklahoma Gas and Electric Co. 17:9–14, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm'n Jan. 26, 2015).

³⁴ Howell Direct, Ex. LCH-1, at 41–43.

³⁵ Burch Direct, Ex. RJB-1.

³⁶ Burch Direct 16:24–17:17.

³⁷ Nickell Direct 4:11–20; McAuley Direct 8:7–12:13.

³⁸ Howell Direct, Ex. LCH-1, 28; Rebuttal Test. of Leon Howell on Behalf of Oklahoma Gas and Electric Co. 18:7–10, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm'n Jan. 26, 2015).

1 deliver a better solution.³⁹ Without a competitive bidding process, the Company has no
2 basis to determine whether its assessment of the market was valid.

3 **Q. WHAT DID OGE'S ANALYSIS SHOW AS THE MOST COST-EFFECTIVE**
4 **MEANS TO FULFILL ITS MOST IMMEDIATE CAPACITY NEED?**

5 A. The Company forecasted the cumulative revenue requirements on a net present value
6 ("NPV") basis over a 30 year planning horizon for two alternatives (i.e., 400 MW CT
7 capacity and 560 MW combined cycle ("CC") capacity) to fill the capacity need created
8 with the Mustang Unit 1-4 retirements. However, there was a marginal difference between
9 these alternatives. Moreover, the CC alternative is forecasted to be more cost-effective than
10 the CT alternative under the high gas and CO₂ sensitivity scenarios.⁴⁰ Based on the myriad
11 of assumptions over 30 years that OGE made to forecast these values, it is not reasonable
12 to conclude from this analysis that one alternative (CT vs. CC) was a clearly superior option
13 over the other.

14 **Q. WAS OGE'S RELIANCE ON ITS MARKET KNOWLEDGE REGARDING THE**
15 **AVAILABILITY OF COMBUSTION TURBINE UNITS IN THE SPP REGION**
16 **SUFFICIENT REASON NOT TO ENGAGE IN A COMPETITIVE BIDDING**
17 **PROCESS?**

18 A. No. The Company indicated that "[it] maintains a general knowledge of resources in the
19 region and the ownership status of those resources. To OG&E's knowledge, no CTs are

³⁹ Direct Test. of Donald R. Rowlett on Behalf of Oklahoma Gas and Electric Co. 15:23–25, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm'n Aug. 6, 2014).

⁴⁰ Responsive Test. of Scott Norwood on Behalf of Oklahoma Industrial Energy Consumers (OIEC). 33:10-36:2, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm'n Dec. 16, 2014).

1 available for acquisition in the [Southwest Power Pool Regional Transmission
2 Organization] region.”⁴¹ I would expect OGE to develop robust systems to gather, analyze,
3 and store data relevant to the demand and supply of electricity, both in retail and wholesale
4 markets, not only in the SPP region, but throughout the nation as appropriate. Like a puzzle,
5 these systems create competitive and market intelligence assets which allow OGE to
6 respond effectively to opportunities and threats on a daily basis. However, when the
7 Company is contemplating a \$390 million generating asset⁴² with a useful life measured in
8 decades, the Company can be taking unnecessary and imprudent risks if it does not confirm
9 its market knowledge with a robust, fair, competitive bidding process.

10 **Q. HAS OGE PREVIOUSLY IMPLEMENTED A COMPETITIVE BIDDING**
11 **PROCESS TO ACQUIRE GENERATION RESOURCES OR PURCHASE THE**
12 **OUTPUT THEREOF?**

13 A. Yes. In 2009, OGE issued a Request for Proposals (“RFP”) (“2009 Wind RFP”) to solicit
14 proposals for delivery of energy from wind energy resources that would be operational no
15 later than December 31, 2010 with preference given to proposals which would be
16 operational no later than June 1, 2010. OG&E sought as much as 300 MW from either an
17 individual facility or in the aggregate from facilities that have a minimum nameplate
18 capability of 50 MW.

19 **Q. WHICH ENTITIES WERE ELIGIBLE TO SUBMIT A BID RESPONSE TO OGE’S**
20 **2009 WIND RFP?**

⁴¹ Rebuttal Test. of Leon Howell on Behalf of Oklahoma Gas and Electric Co. 18:8–10, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm’n Jan. 26, 2015).

⁴² Rowlett Direct 11:3–4.

1 A. The Company invited bid responses from all potential suppliers, including OGE or any
2 affiliate thereof, who could meet the terms and conditions of the RFP. Despite OGE's
3 ability to submit a self-build option, OGE received over 50 bids, both in purchased power
4 agreements and turn-key proposals.⁴³

5 **Q. WHICH BIDS DID OGE ULTIMATELY SELECT FROM THE BID RESPONSES**
6 **TO THE 2009 WIND RFP?**

7 A. OGE ultimately selected two successful bids from the 2009 Wind RP: 1) a 20-year fixed
8 price contract for 152 MW from CPV Keenan;⁴⁴ and 2) a 20-year contract for 130 MW
9 from Taloga.⁴⁵ The Commission approved cost recovery for both purchased power
10 agreements.⁴⁶

11 **Q. WHAT ARE THE SALIENT POINTS TO BE DRAWN FROM THE 2009 WIND**
12 **RFP RELATIVE TO THE COMPANY'S LACK OF A COMPETITIVE BIDDING**
13 **PROCESS TO REPLACE THE RETIRED MUSTANG CAPACITY?**

14 A. There are several salient points I identify below that demonstrate how the lack of a
15 competitive bidding process to replace the retired Mustang capacity may have exposed the
16 Company to unnecessary and imprudent risks. These points are:

⁴³ Direct Test. of Jesse B. Langston on Behalf of Oklahoma Gas and Electric Co. 18:6-9, *Okla. Gas & Elec. Co. Pre-Approval to Construct OU Spirit Wind Farm*, No. PUD 200900167 (Okla. Corp. Comm'n Aug. 14, 2009).

⁴⁴ Direct Test. of Kim A. Morphis on Behalf of Oklahoma Gas and Electric Co. 6:17-7:3, *Okla. Gas & Elec. Co. Wind Energy Purchase Agreement with KEENAN II Renewable Energy Co.*, No. PUD 200900230 (Okla. Corp. Comm'n Oct. 30, 2009).

⁴⁵ Direct Test. of Kim A. Morphis on Behalf of Oklahoma Gas and Electric Co. 6:17-7:5, *Okla. Gas & Elec. Co. Wind Energy Purchase Agreement with Taloga Wind, LLC*, No. PUD 200900231 (Okla. Corp. Comm'n Oct. 30, 2009).

⁴⁶ Final Order 8, Order No. 572,636, *Okla. Gas & Elec. Co. Wind Energy Purchase Agreement with KEENAN II Renewable Energy Co.*, No. PUD 200900230 (Okla. Corp. Comm'n Jan. 5, 2010); Final Order 7, Order No. 572,637, *Okla. Gas & Elec. Co. Wind Energy Purchase Agreement with Taloga Wind, LLC*, No. PUD 2009000231 (Okla. Corp. Comm'n Jan. 5, 2010).

- 1 1. Despite a potential bid by OGE or an affiliate thereof, the 2009 Wind RFP received
2 a robust response with over 50 responses.⁴⁷ Participation in a bid response was not
3 a fruitless exercise. Based on this precedent, a Mustang RFP might have received a
4 similarly robust response.
- 5 2. OGE was receptive to receiving a bid response from any supplier who was capable
6 of meeting the 2009 Wind RFP's terms and conditions. The Company specifying
7 "wind energy resources" was the primary limiting factor. In a Mustang RFP, OGE
8 could have placed reasonable limits on the responses based on one or more
9 characteristics, such as location or technology.
- 10 3. In the 2009 Wind RFP, OGE included the criteria on which bid responses would be
11 evaluated, such as economic, operational and technical features as well as the
12 creditworthiness of the bidder. With a Mustang RFP, the Company could have
13 stated the incumbent advantages of the Mustang site to discourage potential
14 responses with inferior characteristics.
- 15 4. Due to the presence of a "bid team" for the 2009 Wind RFP, OGE or an affiliate
16 most likely had a self-build option. However, the Company selected two
17 unaffiliated alternatives from the responses received from the 2009 Wind RFP.

18 **Q. DID OGE ADEQUATELY TEST ITS ASSUMPTIONS REGARDING ITS**
19 **MARKET KNOWLEDGE TO MAKE CERTAIN THAT THE INCREMENTAL**

⁴⁷ Direct Test. of Jesse B. Langston on Behalf of Oklahoma Gas and Electric Co. 18:6-9, *Okla. Gas & Elec. Co. Pre-Approval to Construct OU Spirit Wind Farm*, No. PUD 200900167 (Okla. Corp. Comm'n Aug. 14, 2009).

**RESOURCES TO REPLACE THE RETIRED MUSTANG CAPACITY WERE
THE MOST COST EFFECTIVE ALTERNATIVE TO THE COMPANY?**

A. No. The Company did not conduct any competitive bidding process to determine whether an alternative technology, location, or timing of incremental capacity resources could deliver a better solution.⁴⁸ There is no substitute for an open, fair competitive bidding process to vigorously test such market assumptions.

**Q. CAN YOU PROVIDE AN EXAMPLE OF HOW AN OPEN, FAIR COMPETITIVE
BIDDING PROCESS VIGOROUSLY TESTS MARKET ASSUMPTIONS?**

A. Yes. For the construction and installation of the seven 66 MW CTs at the Mustang Energy Center, the Company developed a capital budget of approximately \$331 million.⁴⁹ OGE estimated this value by matching its market knowledge of commodity and labor prices with a “bottom up” estimation of the quantity of goods and services needed for the project.⁵⁰ The Company then solicited 39 different request for bids (“RFB”) for equipment, materials, and labor at the Mustang site.⁵¹ For each RFB, three or more potential bidders “sharpened their pencils” to put forth market-based responses. This process allowed OGE to optimize price and value, as the Company is expected to complete the project \$10 million under budget.⁵²

**Q. IN THIS CONTEXT, DIFFERENTIATE BETWEEN A REQUEST FOR
PROPOSALS AND A REQUEST FOR BIDS.**

⁴⁸ See Direct Test. of Donald R. Rowlett on Behalf of Oklahoma Gas and Electric Co. 15–23–25, *Okla. Gas & Elec. Co. Plan to Comply with the Federal Clean Air Act*, No. PUD 201400229 (Okla. Corp. Comm’n Aug. 6, 2014).

⁴⁹ OGE Response to AG-OGE-8-1, Attachment 2, attached as Ex. TFB-11.

⁵⁰ Ex. TFB-11.

⁵¹ Burch Direct 25:19–20.

⁵² Ex. TFB-11.

1 A. In this context, the difference is a matter of scope. With a request for bids, the Mustang site
2 has already been chosen, and the Company is seeking market-based price information for
3 a component of the project, such as a specified quantity of pipes, concrete, or steel. With a
4 request for proposals, OGE could have identified the Mustang site as its self-build
5 alternative and listed its incumbent advantages, but challenged potential bidders to develop
6 better alternatives. A Mustang RFP would have confirmed whether OGE's market
7 assumptions were valid.

8 **Q. DOES THE \$10 MILLION SAVINGS COMPARED WITH THE ORIGINAL**
9 **CAPITAL BUDGET JUSTIFY THE PRUDENCE OF THE COMPANY'S**
10 **DECISION TO CONSTRUCT AND INSTALL THE SEVEN 66 MW CT UNITS AT**
11 **THE MUSTANG ENERGY CENTER?**

12 A. No. Based on my experience, a PUC must evaluate the prudence or reasonableness of a
13 Company's decisions based on what the utility either knew or should have known at the
14 time the decision was made. The estimated cost of the project several years after the
15 original capital budget was established should have no impact on whether OGE properly
16 evaluated all relevant information prior to its decision to proceed. The absence of a
17 competitive bidding process substantially hinders the Commission's ability to determine
18 whether the Mustang Modernization Project was based on reasonable and prudent
19 decisions.

20 **Q. WHAT IS THE NEXT-GENERATION RESOURCE THAT OGE HAS SELECTED**
21 **IN ITS EXPANSION PLAN?**

22 A. In its most recent IRP, OGE identified a 560 MW combined cycle unit with a 2020
23 commercial in-service date as the next-generation resource under its most cost-effective

1 “Spread CT” expansion plan.⁵³ With overnight capital costs estimated at \$978 per kilowatt
2 (“KW”) (2016 dollars), OGE can expect to spend nearly \$600 million for this next
3 generation resource.⁵⁴

4 **Q. WHAT IS THE APPROPRIATE REGULATORY RESPONSE FOR OGE’S**
5 **FAILURE TO ENGAGE IN AN OPEN, FAIR, COMPETITIVE BIDDING**
6 **PROCESS BEFORE ITS DECISION TO LOCATE SEVEN 66 MW CT UNITS AT**
7 **THE MUSTANG ENERGY CENTER?**

8 A. The lack of an open, fair, competitive bidding process to replace the retired Mustang
9 capacity is problematic when determining whether the construction and installation of
10 Mustang Units 6 through 12 is a reasonable, prudent decision by the Company. The
11 Commission should signal strongly its expectation for an open, fair competitive bidding
12 process for the 560 MW combined cycle addition as well as subsequent generation resource
13 additions.

14 **VIII. RATE CASE EXPENSE**

15 **Q. PLEASE SUMMARIZE RUSSELL R. EVANS’ DIRECT TESTIMONY.**

16 A. Dr. Evans provided the following summary of his direct testimony:

17 [T]o provide my perspective as to the broad economic principles that will
18 be considered by the Commission in this case and to discuss the broad
19 importance of the decision in this case to both OG&E’s customers and the
20 entire state. *My testimony supplements and supports that of Dr. Roger A.*

⁵³ OGE Integrated Resource Plan 40–43 (2015), excerpt attached as Ex. TFB-12.

⁵⁴ *Capital Cost Estimates for Utility Scale Electricity Generating Plants* 7, Table 1, U.S. Energy Information Administration (Nov. 2016). 2016 dollars are escalated by 2.1 percent per year. *See id.* at 2 n.5.

1 *Morin and Mr. Stephen E. Merrill* by elaborating on economic
2 considerations that are essential to completely and accurately assess the
3 “public interest” that the Commission seeks to satisfy in this case.⁵⁵

4 **Q. DID DR. EVANS MAKE ANY SPECIFIC RECOMMENDATIONS REGARDING**
5 **OGE’S RATES AND SERVICE IN THIS CAUSE?**

6 A. No. Dr. Evans does not make any specific recommendations regarding OGE’s rates and
7 service,⁵⁶ including the rate of return on common equity.⁵⁷ Instead, Dr. Evans’ testimony
8 is the Company’s third opportunity to justify its request for a return on common equity.

9 **Q. DO YOU HAVE ANY SPECIFIC COMMENTS ABOUT DR. EVANS’ DIRECT**
10 **TESTIMONY?**

11 A. Yes. Dr. Evans’ direct testimony is filled with generic economic principles, such as
12 “normal profit,”⁵⁸ “optimal allocation of resources,”⁵⁹ and “opportunity costs”⁶⁰ that are no
13 more specific to OGE and this rate case proceeding than what can be found in an
14 undergraduate economics textbook. Although vital to a fair outcome, these generic
15 principles should be considered a given.

16 **Q. ARE THERE OTHER COMPANY WITNESSES WHO EITHER TESTIFIED OR**
17 **COULD HAVE TESTIFIED TO THESE GENERIC ECONOMIC PRINCIPLES?**

⁵⁵ Direct Test. of Russell R. Evans, Ph.D. on Behalf of Oklahoma Gas and Electric Co. 3:3–7 (Jan. 16, 2018) (emphasis added) [hereinafter “Evans Direct”].

⁵⁶ OGE Response to AG-OGE-12-8, attached as Ex. TFB-13.

⁵⁷ OGE Response to AG-OGE-7-9, attached as Ex. TFB-14; OGE Response to OIEC-OGE-5-4, attached as Ex. TFB-15.

⁵⁸ Evans Direct 5:4–15.

⁵⁹ Evans Direct 5:17–31.

⁶⁰ Evans Direct 6:10–19.

1 A. Yes. In addition to Dr. Evans, OGE witnesses Roger A. Morin, Ph.D., and Stephen E.
2 Merrill also testify regarding setting the rate of return on common equity correctly to
3 minimize long-term costs for customers.⁶¹ Dr. Morin and Mr. Merrill also refer to several
4 generic economic principles as Dr. Evans did.⁶² In the absence of Dr. Evans' direct
5 testimony, Dr. Morin and Mr. Merrill could have testified regarding the same generic
6 economic principles with minimal incremental effort and expense.

7 **Q. DO YOU HAVE A RECOMMENDATION TO THE COMPANY'S PROPOSED**
8 **RATE CASE EXPENSE?**

9 A. Yes. I would recommend that the Commission disallow the costs associated with Russell
10 R. Evans, Ph.D., testimony and appearance on behalf of the Company. OGE has incurred
11 \$20,650 for his services provided in this cause through March 31, 2018.⁶³ The Company
12 would seek to recover similar costs incurred after this date in its next rate case proceeding.
13 The cost of Dr. Evans' consulting fee to appear as an OGE witness is an unreasonable and
14 imprudent expense. The customers should not be held responsible for the cost of this
15 economics primer.

16 **IX. SUMMARY AND CONCLUSION**

17 **Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY?**

18 A. In my testimony, I recommend that the Commission take the following actions:

⁶¹ Direct Test. of Stephen E. Merrill on Behalf of Oklahoma Gas and Electric Co. 4:10–5:2 (Jan. 16 2018) [hereinafter "Merrill Direct"]; Direct Test. of Roger A. Morin, PhD, on Behalf of Oklahoma Gas and Electric Co. 8:29–9:29 (Jan. 16, 2018) [hereinafter "Morin Direct"].

⁶² Merrill Direct 4:1–8; Morin Direct 13:28–14:7.

⁶³ See Exhibit ECF-1, at 1.

- 1 • Deny the Company's request for a regulatory asset associated with the dry flue gas
2 desulfurization systems at its Sooner Plant from the commercial in-service date to
3 the effective date of base rates implemented in OGE's next base rates;
- 4 • Impose a 25 basis point downward adjustment on the rate of return on common
5 equity until the Company satisfies the following criteria: a) The Company meets its
6 2017 target of 114 minutes for SAIDI; b) The Company's year-over-year change
7 in the scores from JD Power's annual residential surveys is greater than the median
8 year-over-year improvement for the U.S. South Large electric utility cohort; and c)
9 The Company's year-over-year change in the scores from JD Power's annual
10 business surveys is greater than the median year-over-year improvement for the
11 U.S. South Large electric utility cohort;
- 12 • Recommend that the Commission signal strongly its expectation for an open, fair,
13 competitive bidding process for generation resource additions; and
- 14 • Disallow the costs associated with the testimony and appearance of Russell R.
15 Evans, Ph.D., on behalf of the Company.

16 **Q. DOES THIS CONCLUDE YOUR RESPONSIVE TESTIMONY OF MAY 2, 2018?**

17 **A. Yes, it does.**

AFFIDAVIT OF TODD F. BOHRMANN

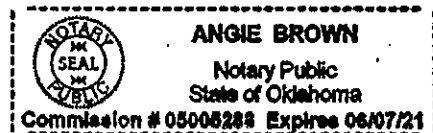
STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

I, Todd F. Bohrmann, do hereby swear/affirm that the foregoing testimony is true and correct to the best of my knowledge and belief.

Todd F. Bohrmann
Todd F. Bohrmann

Subscribed and sworn to/affirmed before me this 2nd of May, 2018.

Angie Brown
Notary Public



My Commission expires on _____.

CERTIFICATE OF SERVICE

On this 2nd day of May, 2018, a true and correct copy of the above and foregoing *Responsive Testimony of Todd F. Bohrmann on Behalf of Mike Hunter, Oklahoma Attorney General*, along with attached exhibits, was sent via electronic mail to the following interested parties:

Mr. Brandy L. Wreath
Director of the Public Utility Division
OKLAHOMA CORPORATION COMMISSION
Jim Thorpe Building
2101 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
b.wreath@occemail.com

Mr. William L. Humes
Mr. John D. Rhea
Mr. Dominic Williams
OKLAHOMA GAS AND ELECTRIC COMPANY
P.O. Box 321, MC 1208
Oklahoma City, Oklahoma 73101
humeswl@oge.com
rheajd@oge.com
williardo@oge.com

Mr. Curtis M. Long
CONNER & WINTERS LLP
4000 One Williams Center
Tulsa, Oklahoma 74172
clong@cwlaw.com

Mr. Jack G. Clark, Jr.
CLARK, WOOD & PATTEN, P.C.
3545 Northwest 58th Street, Suite 400
Oklahoma City, Oklahoma 73112
cclark@cswp-law.com

Mr. Thomas P. Schroedter
HALL, ESTILL, HARDWICK GABLE,
GOLDEN & NELSON, P.C.
320 South Boston Avenue, Suite 200
Tulsa, Oklahoma 74103-3706
tschroedter@hallestill.com

Ms. Judith L. Johnson
Ms. Natasha M. Scott
Deputy Generals Counsel
OKLAHOMA CORPORATION COMMISSION
Jim Thorpe Building
2101 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
j.johnson2@occemail.com
n.scott@occemail.com

Mr. William J. Bullard
WILLIAMS, BOX, FORSHEE & BULLARD, PC
522 Colcord Drive
Oklahoma City, Oklahoma 73102
bullard@wbfbllaw.com

Mr. Kimber L. Shoop
CROOKS, STANFORD & SHOOP, PLLC
171 Stonebridge Boulevard
Edmond, Oklahoma 73013
KS@CrooksStanford.com

Mr. Ronald E. Stakem
CHEEK & FALCONE, PLLC
6301 Waterford Boulevard, Suite 320
Oklahoma City, Oklahoma 73118
rstakem@cheekfalcone.com

Ms. Cheryl A. Vaught
Mr. Scot A. Conner
VAUGHT & CONNER, PLLC
1900 Northwest Expressway, Suite 1300
Oklahoma City, Oklahoma 73118
cvaught@vcokc.com
sconner@vcokc.com

*Cause No. PUD 201700496
Oklahoma Gas and Electric Co.
Responsive Testimony of Todd F. Bohrmann*

Mr. Jon Laasch
JACOBSON & LAASCH
212 East Second Street
Edmond, Oklahoma 73034
jonlaasch@yahoo.com


Ms. Deborah R. Thompson
OK ENERGY FIRM, PLLC
P.O. Box 54632
Oklahoma City, Oklahoma 73154
dthompson@okenergyfirm.com

Mr. James A. Roth
Mr. Marc Edwards
Mr. C. Eric Davis
PHILLIPS MURRAH, P.C
Corporate Tower, 13th Floor
101 North Robinson Avenue
Oklahoma City, Oklahoma 73102
jaroeth@phillipsmurrah.com
medwards@phillipsmurrah.com
cedavis@phillipsmurrah.com

Mr. J. Eric Turner
DERRYBERRY & NAIFEH, LLP
4800 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
eturner@derryberrylaw.com

Mr. Rick D. Chamberlain
BEHRENS, WHEELER & CHAMBERLAIN
6 NORTHEAST 63RD STREET, SUITE 400
Oklahoma City, Oklahoma 73105
rchamberlain@okenergylaw.com

Major Andrew J. Unsicker
Captain Lanny L. Zieman
AFLOA/JACE-ULFSC
139 Barnes Drive, Suite 1
Tyndall Air Force Base, Florida 32403
Andrew.Unsicker@us.af.mil
Lanny.Zieman.1@us.af.mil


JARED B. HAINES
Deputy Chief Assistant Attorney General
OKLAHOMA ATTORNEY GENERAL

TODD F. BOHRMANN

313 NE 21st Street
Oklahoma City, OK 73105
(405) 522-2924
Todd.Bohrmann@oag.ok.gov

Summary

Mid-level professional with extensive experience in economics, finance, and marketing. Committed to enhancing strategic positioning through accurate interpretation of industry and market conditions.

Professional Experience

OKLAHOMA OFFICE OF THE ATTORNEY GENERAL, Oklahoma City, OK **2017-present**
Regulatory Analyst

- Prepare and present expert witness testimony regarding the economic regulation of jurisdictional electric and gas utilities before state agencies, boards, and commissions.

ACADIAN CONSULTING GROUP, Baton Rouge, LA **2016-2017**
Senior Research Analyst

- Leveraged skills and knowledge associated with economic regulation of investor-owned utilities to identify issues, review discovery responses, and assist in preparing expert witness testimony in selected proceedings before several public utility commissions.
- Researched the impact of the natural gas renaissance on the liquefied natural gas, electric generation, petrochemicals, processing, pipeline, and storage industries in the states of Texas, Louisiana, Mississippi, and Alabama.

CSX TRANSPORTATION, Jacksonville, FL **2006-2016**
Manager, Coal Planning and Market Analytics (2014-2016)

Provided critical and strategic thought regarding competitive position for utility coal franchise due to a deep understanding of industry and market conditions.

- Drove more effective pricing decisions through comparing CSX-served electric generation plants with competitive alternatives through internal presentations to senior leadership.
- Aligned operational resources with commercial expectations due to a monthly top-down forecast of over \$1 billion in annual sales from utility coal customers.
- Developed commercial and regulatory strategies to minimize impact of economic and environmental regulations on coal-fired electric generation within CSX's customer base.

Manager, Market Strategy (2006-2014)

Provided timely, relevant economic analysis to executive leadership and over 400 sales and marketing managers.

- Provided guidance regarding CSX sales and volume performance relative to prior year results and current year expectations.
- Enhanced market and competitive intelligence sources and methods by tracking volume by origin-destination by mode in over 100 product markets and 70 geographic markets.
- Generated \$100,000 in incremental revenue annually through auctioning scarce rail cars among agricultural customers at a premium price.

Independent Consultant, Jacksonville, FL

2006-2008

Leveraged skills and knowledge associated with economic regulation of investor-owned electric utilities to identify issues, develop discovery requests, and review discovery responses in selected proceedings before the Florida Public Service Commission.

Presented expert testimony on the regulatory jurisdiction of costs recovered through the fuel and purchased power cost recovery clause.

FLORIDA PUBLIC SERVICE COMMISSION, Tallahassee, FL

1994-2006

Economic Analyst

Led a 19-member team of attorneys, accountants, economists, engineers, and administrative staff to identify and resolve factual, legal, and policy issues regarding prudent regulatory oversight of \$10 billion annually for the purchase, delivery, storage, consumption, and disposal of fuel used for electric generation by investor-owned utilities.

- Initiated and developed an incentive program adopted by the Florida Public Service Commission that allows a utility to maximize its wholesale energy sales by allowing each utility to retain part of its annual profits earned on these sales after a target is achieved.
- Presented expert testimony regarding a regulatory accounting system for revenues and costs associated with price risk management of coal, oil, natural gas, and wholesale energy purchases.
- Co-authored the annual "Review of Ten-Year Site Plans" which evaluates the reasonableness of Florida's electric utilities' generation and transmission expansion plans.

Education

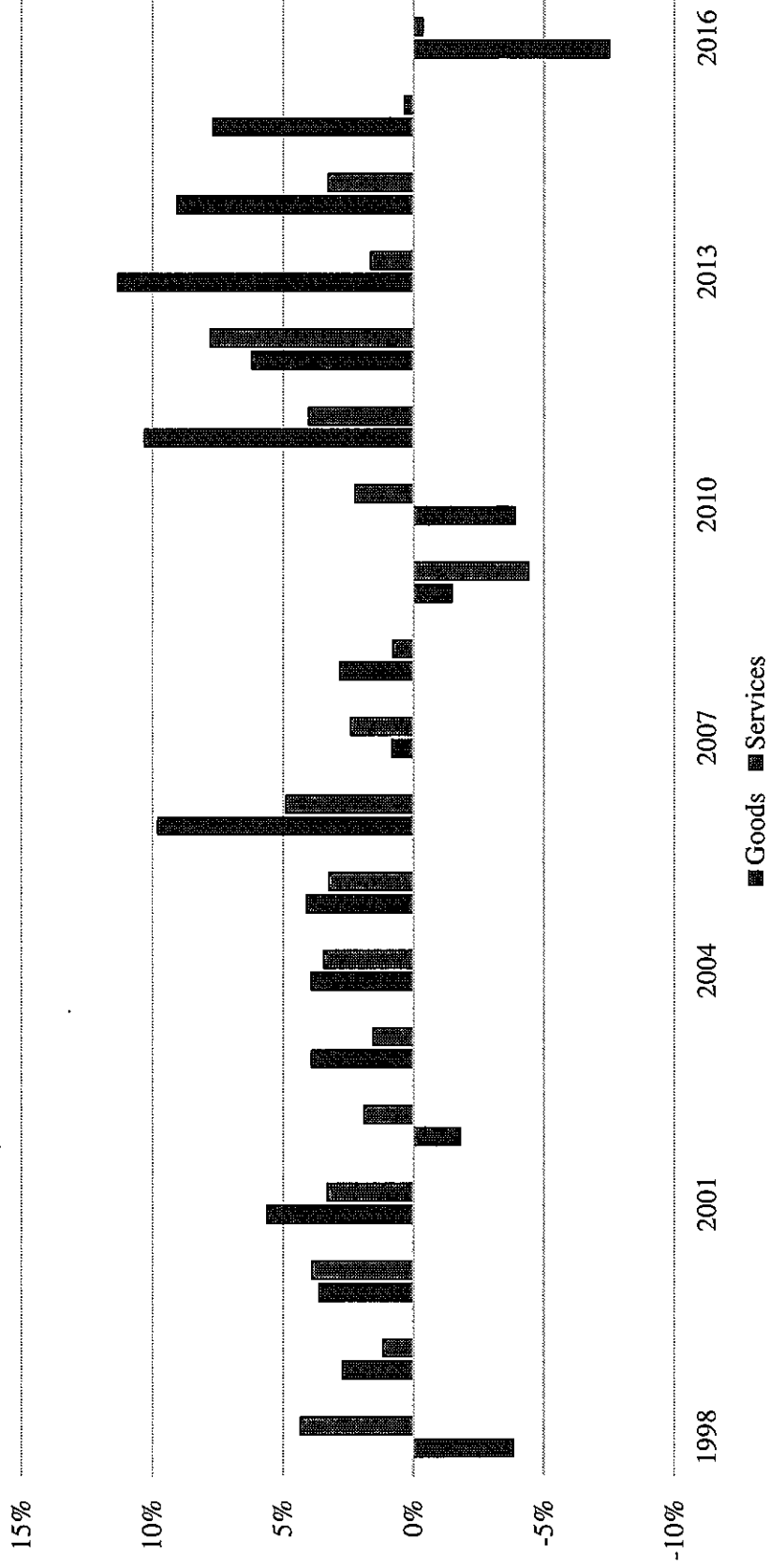
University of Central Florida, Orlando, Florida.

- Master of Business Administration
- Bachelor of Arts in Economics, with honors

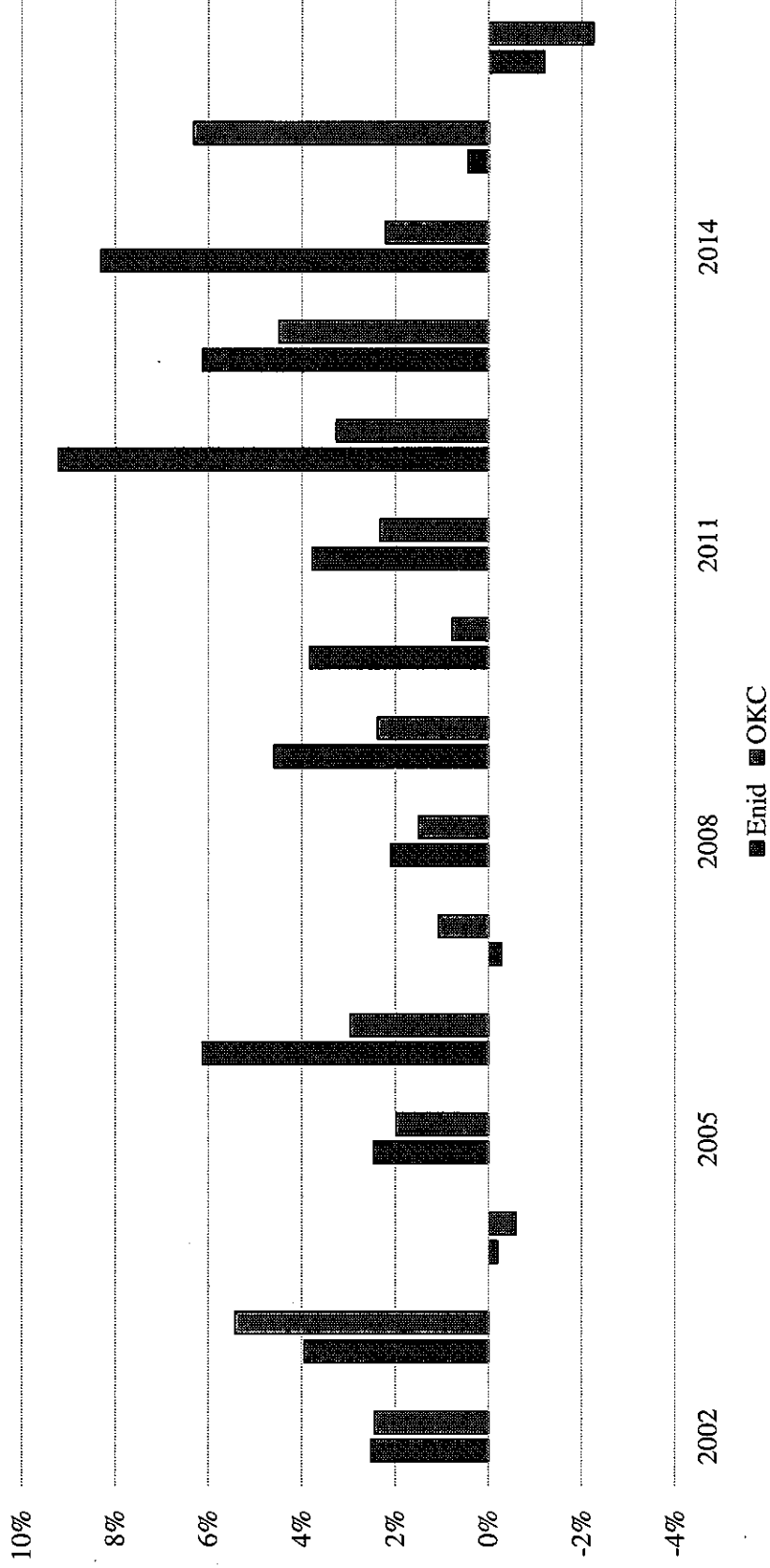
Expert Witness Testimony

- Direct Testimony on behalf of Florida Public Service Commission Staff in Florida Public Service Commission Docket No. 930885-EU, "Petition to resolve territorial dispute with Gulf Coast Electric Cooperative, Inc. By Gulf Power Company."
- Direct Testimony on behalf of Florida Public Service Commission Staff in Florida Public Service Commission Docket No. 011605-EI, "Review of investor-owned electric utilities' risk management policies and procedures."
- Rebuttal Testimony on behalf of Florida Office of Public Counsel in Florida Public Service Commission Docket No. 060658-EI, "Petition on behalf of Citizens of the State of Florida to require Progress Energy Florida, Inc. to refund customers \$143 million."
- Responsive and Surrebuttal Testimony on behalf of Mike Hunter, Attorney General of Oklahoma, in Oklahoma Corporation Commission Cause No. 201700151, "Application Of Public Service Company Of Oklahoma, An Oklahoma Corporation, For An Adjustment In Its Rates And Charges And The Electric Service Rules, Regulations And Conditions Of Service For Electric Service In The State Of Oklahoma."
- Responsive and Surrebuttal Testimony on behalf of Mike Hunter, Attorney General of Oklahoma, in Oklahoma Corporation Commission Cause No. 201700267, "Application Of Public Service Company Of Oklahoma ("PSO") For Approval Of The Cost Recovery Of The Wind Catcher Energy Connection Project; A Determination There Is A Need For The Project; Approval For Future Inclusion In Base Rates Cost Recovery Of Prudent Costs Incurred By PSO For The Project; Approval Of A Temporary Cost Recovery Rider; Approval Of Certain Accounting Procedures Regarding Federal Production Tax Credits; Waiver Of OAC 165:35-38-5(E); And Such Other Relief The Commission Deems PSO Is Entitled."
- Responsive Testimony on behalf of Mike Hunter, Attorney General of Oklahoma, in Oklahoma Corporation Commission Cause No. 201700471, "In The Matter Of The Application Of The Empire District Electric Company For Approval Of Its Customer Savings Plan."
- Responsive Testimony on behalf of Mike Hunter, Attorney General of Oklahoma, in Oklahoma Corporation Commission Cause No. 201700495, "Application of Arkansas Oklahoma Gas Corporation For Waiver of Requirement To File For Review of Performance Based Rates For The Twelve Months Ended August 31, 2017 And Request For Tariff Change."

Oklahoma Economic Output



OGE Metropolitan Area Economic Output





Investor Update

March 2018

Safe Harbor

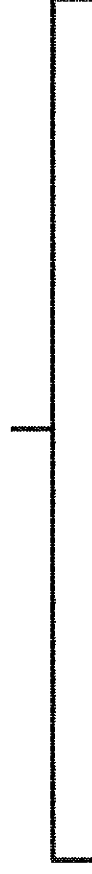
Some of the matters discussed in this news release may contain forward-looking statements that are subject to certain risks, uncertainties and assumptions. Such forward-looking statements are intended to be identified in this document by the words "anticipate", "believe", "estimate", "expect", "intend", "objective", "plan", "possible", "potential", "project" and similar expressions. Actual results may vary materially. Factors that could cause actual results to differ materially include, but are not limited to: general economic conditions, including the availability of credit, access to existing lines of credit, access to the commercial paper markets, actions of rating agencies and their impact on capital expenditures; the ability of the Company and its subsidiaries to access the capital markets and obtain financing on favorable terms as well as inflation rates and monetary fluctuations; the ability to obtain timely and sufficient rate relief to allow for recovery of items such as capital expenditures, fuel costs, operating costs, transmission costs and deferred expenditures; prices and availability of electricity, coal, natural gas and NGLs; the timing and extent of changes in commodity prices, particularly natural gas and NGLs, the competitive effects of the available pipeline capacity in the regions Enable serves, and the effects of geographic and seasonal commodity price differentials, including the effects of these circumstances on re-contracting available capacity on Enable's interstate pipelines; the timing and extent of changes in the supply of natural gas, particularly supplies available for gathering by Enable's gathering and processing business and transporting by Enable's interstate pipelines, including the impact of natural gas and NGLs prices on the level of drilling and production activities in the regions Enable serves; business conditions in the energy and natural gas midstream industries, including the demand for natural gas, NGLs, crude oil and midstream services; competitive factors including the extent and timing of the entry of additional competition in the markets served by the Company; the impact on demand for our services resulting from cost-competitive advances in technology, such as distributed electricity generation and customer energy efficiency programs; technological developments, changing markets and other factors that result in competitive disadvantages and create the potential for impairment of existing assets; factors affecting utility operations such as unusual weather conditions; catastrophic weather-related damage; unscheduled generation outages, unusual maintenance or repairs; unanticipated changes to fossil fuel, natural gas or coal supply costs or availability due to higher demand, shortages, transportation problems or other developments; environmental incidents; or electric transmission or gas pipeline system constraints; availability and prices of raw materials for current and future construction projects; the effect of retroactive pricing of transactions in the SPP markets or adjustments in market pricing mechanisms by the SPP; Federal or state legislation and regulatory decisions and initiatives that affect cost and investment recovery, have an impact on rate structures or affect the speed and degree to which competition enters the Company's markets; environmental laws, safety laws or other regulations that may impact the cost of operations or restrict or change the way the Company operates its facilities; changes in accounting standards, rules or guidelines; the discontinuance of accounting principles for certain types of rate-regulated activities; the cost of protecting assets against, or damage due to, terrorism or cyberattacks and other catastrophic events; creditworthiness of suppliers, customers and other contractual parties; social attitudes regarding the utility, natural gas and power industries; identification of suitable investment opportunities to enhance shareholder returns and achieve long-term financial objectives through business acquisitions and divestitures; increased pension and healthcare costs; costs and other effects of legal and administrative proceedings, settlements, investigations, claims and matters, including, but not limited to, those described in the Company's Form 10-K filed; difficulty in making accurate assumptions and projections regarding future revenues and costs associated with the Company's equity investment in Enable that the Company does not control; and other risk factors listed in the reports filed by the Company with the Securities and Exchange Commission including those listed in Risk Factors in the Company's Form 10-K for the year ended December 31, 2017.

44

OGE Energy Corporate Structure

OGE Energy Corp

(NYSE: OGE)



- Well positioned regulated utility with growing service territory
- Over \$1 billion of environmental compliance and plant modernization projects to be completed by January 2019
- Utility long-term growth rate of 4% – 6%
- Dividend growth rate targeted at 10% per year through 2019
- OGE holds a 25.7% limited partner interest and a 50% general partner interest of Enable Midstream Partners, LP
- Enhanced scale, with approximately \$11 billion of combined assets
- Doing exactly what we planned - provide a source of cash to OGE, become a larger stronger entity and fund itself

Investment Thesis

Clear line of sight for total return

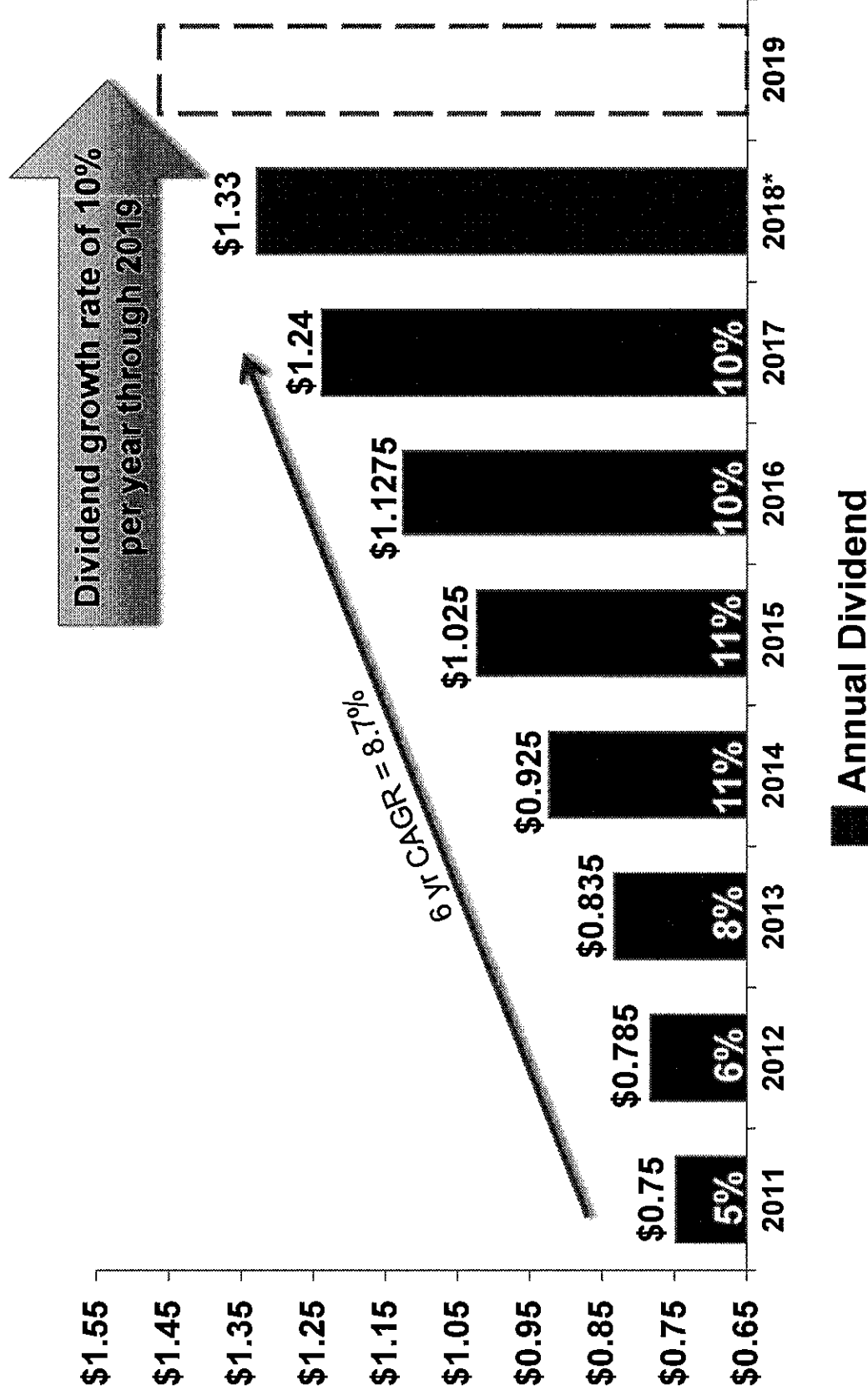
- Strong credit ratings
- Utility growth rate of 4-6 percent
- Annual dividend growth rate of 10 percent through 2019
- Strong balance sheet, liquidity and cash flow – no public equity required

Oklahoma is still growing and poised for a pickup with an increase in commodity prices

Arkansas regulation has improved – Mustang approved

Management team is focused on growing the regulated business

Strong, Consistent Dividend Growth



*Quarterly dividend rate declared by the Board of Directors in September 2017

OG&E Facts

Regulated electric utility:
842,000 customers

Generating capacity:
6,771 megawatts, 7
power plants, 3 wind
farms

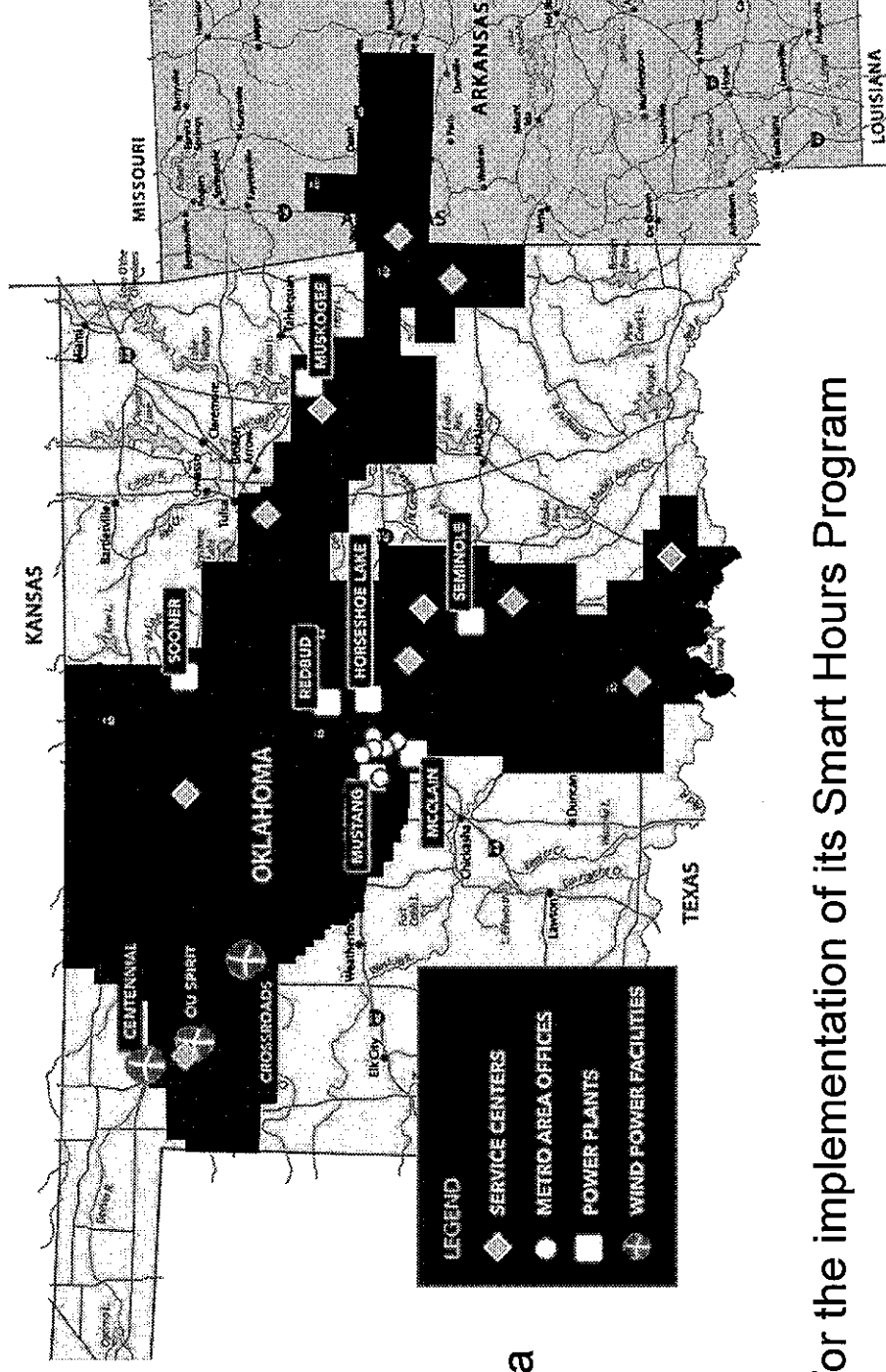
Service territory: 30,000
square miles in Oklahoma
and western Arkansas

2,295 Full-time (non-
union) Employees

2013 EEI Edison Award for the implementation of its Smart Hours Program

EEI's Emergency Recovery Award 12 times since 1999

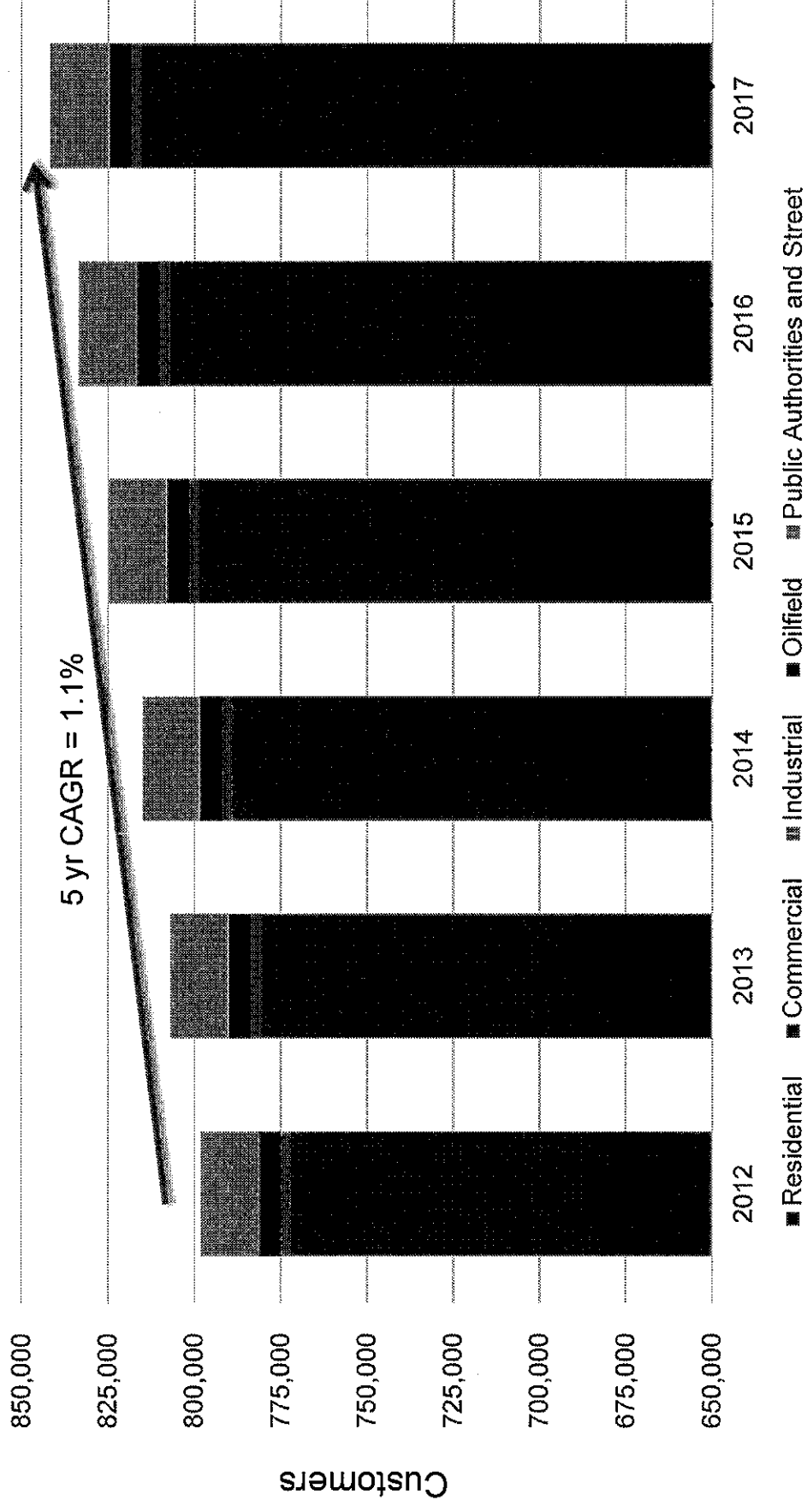
J.D. Power and Associates' 2013, 2014, & 2015 Electric Utility Residential Customer
Satisfaction Award



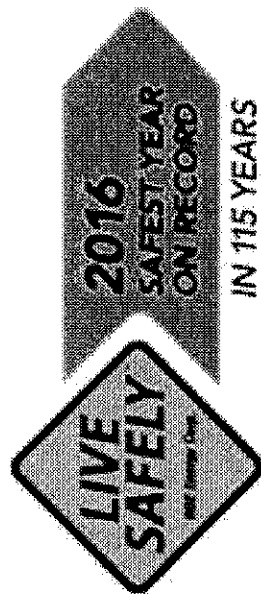
Focus for *OG&E*[®]

- Execute compliance strategy for environmental regulations specifically, Regional Haze
- Execute Oklahoma and Arkansas regulatory plan
- Continue to develop automation solutions for OG&E's customers through the Smart Grid platform
- Investing for the future

Customer Growth

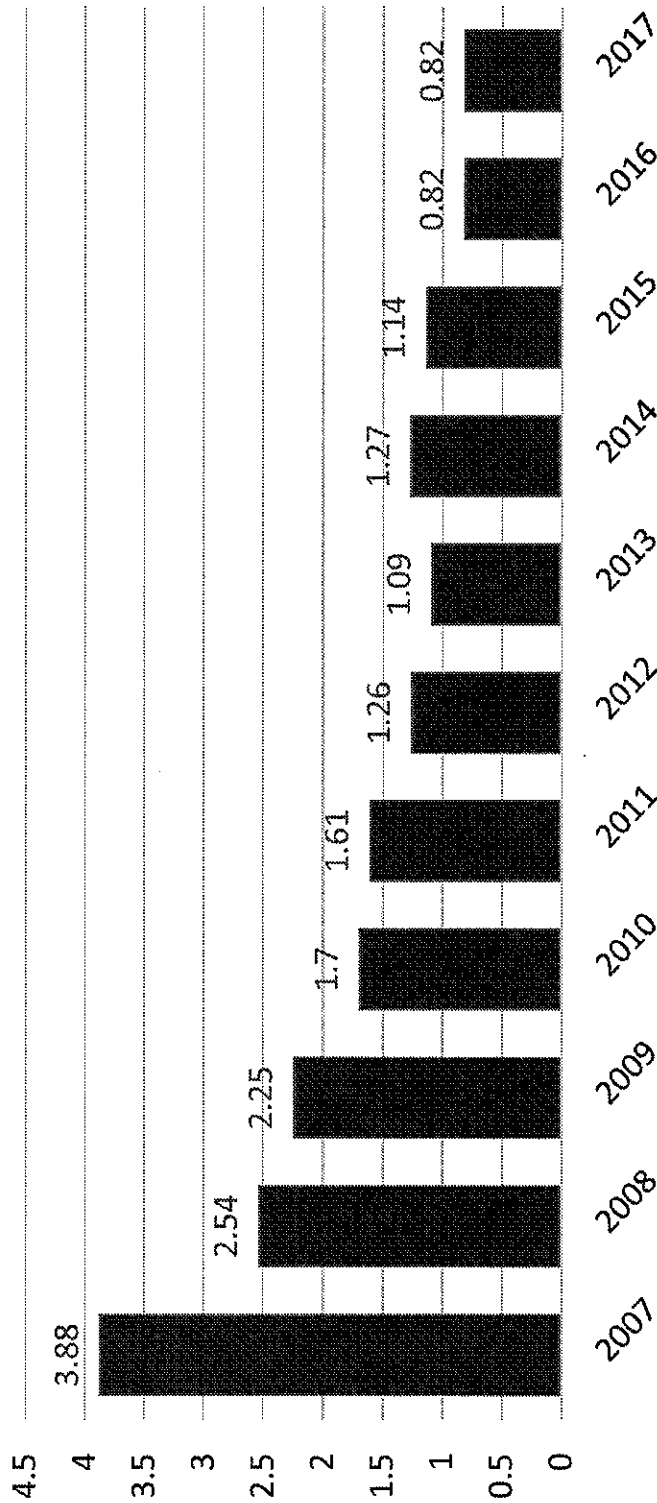


Safety



- In 2017 we matched 2016's best safety year in OG&E history
- 10 recordable incidents

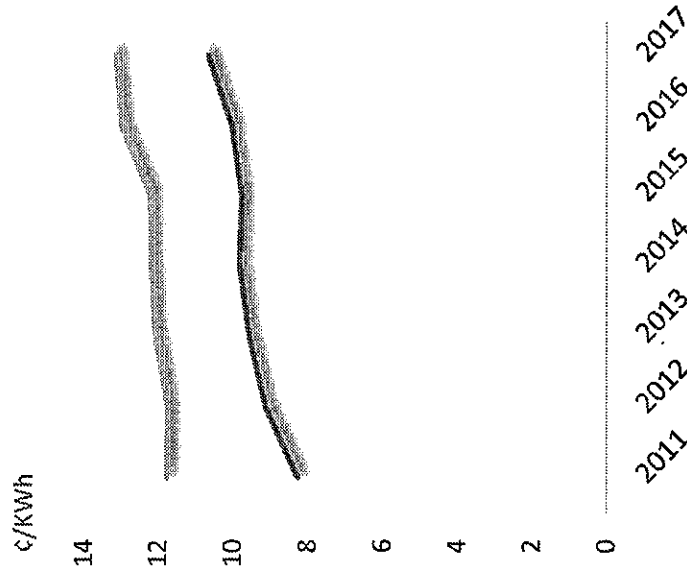
OSHA Incident Rate 2007 - 2017



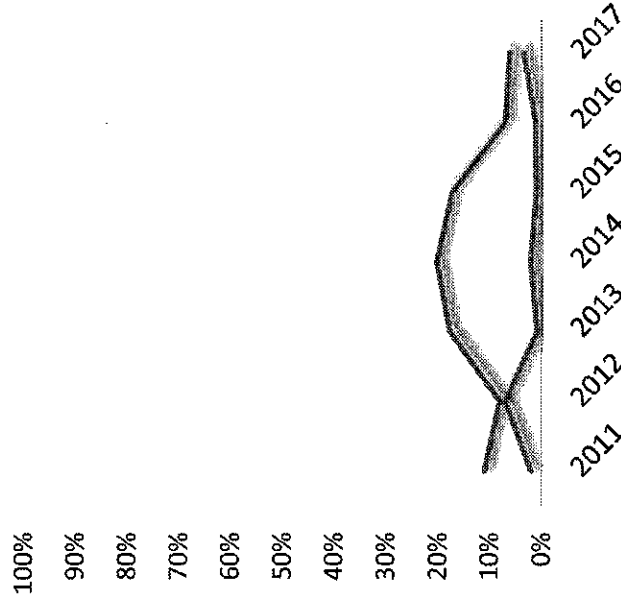
51

Customer Value

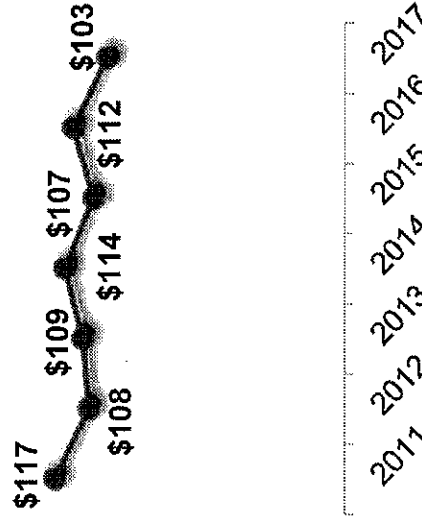
Low Customer Rates



Solid Generating Plant Performance



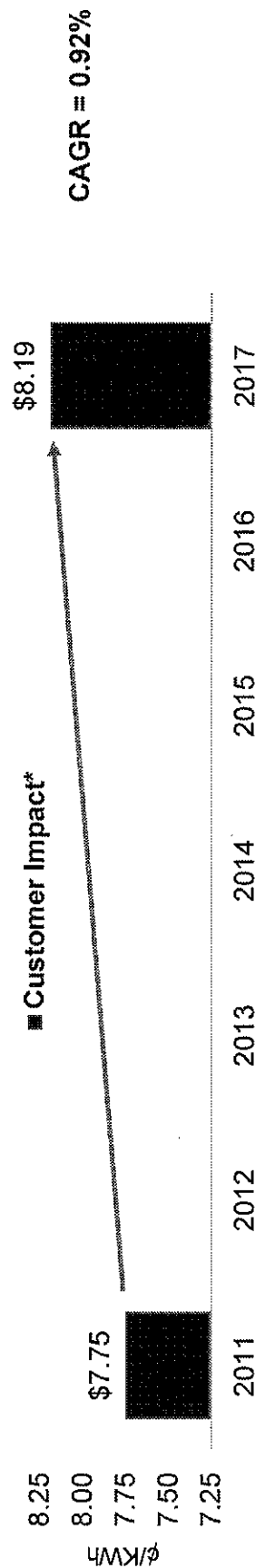
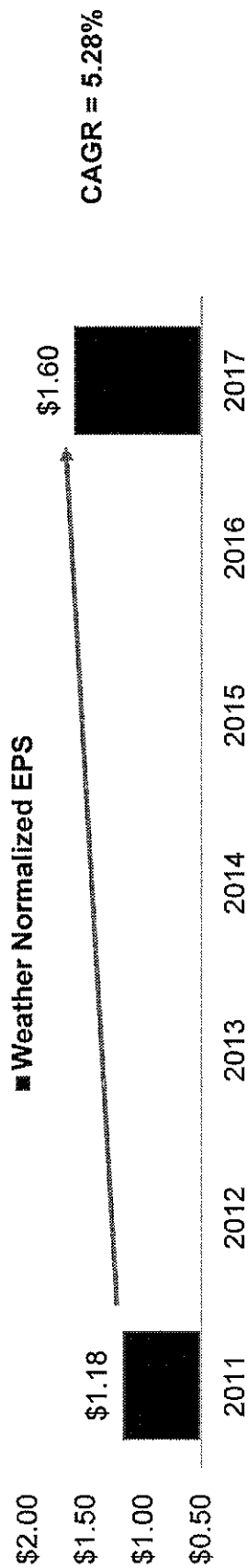
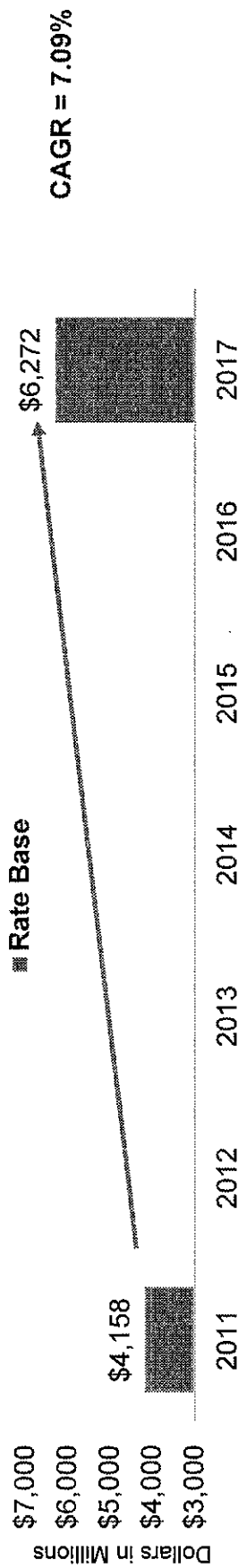
Stable Residential Bills



Source: EEl Typical Bills and Average Rates Report Summer 2017

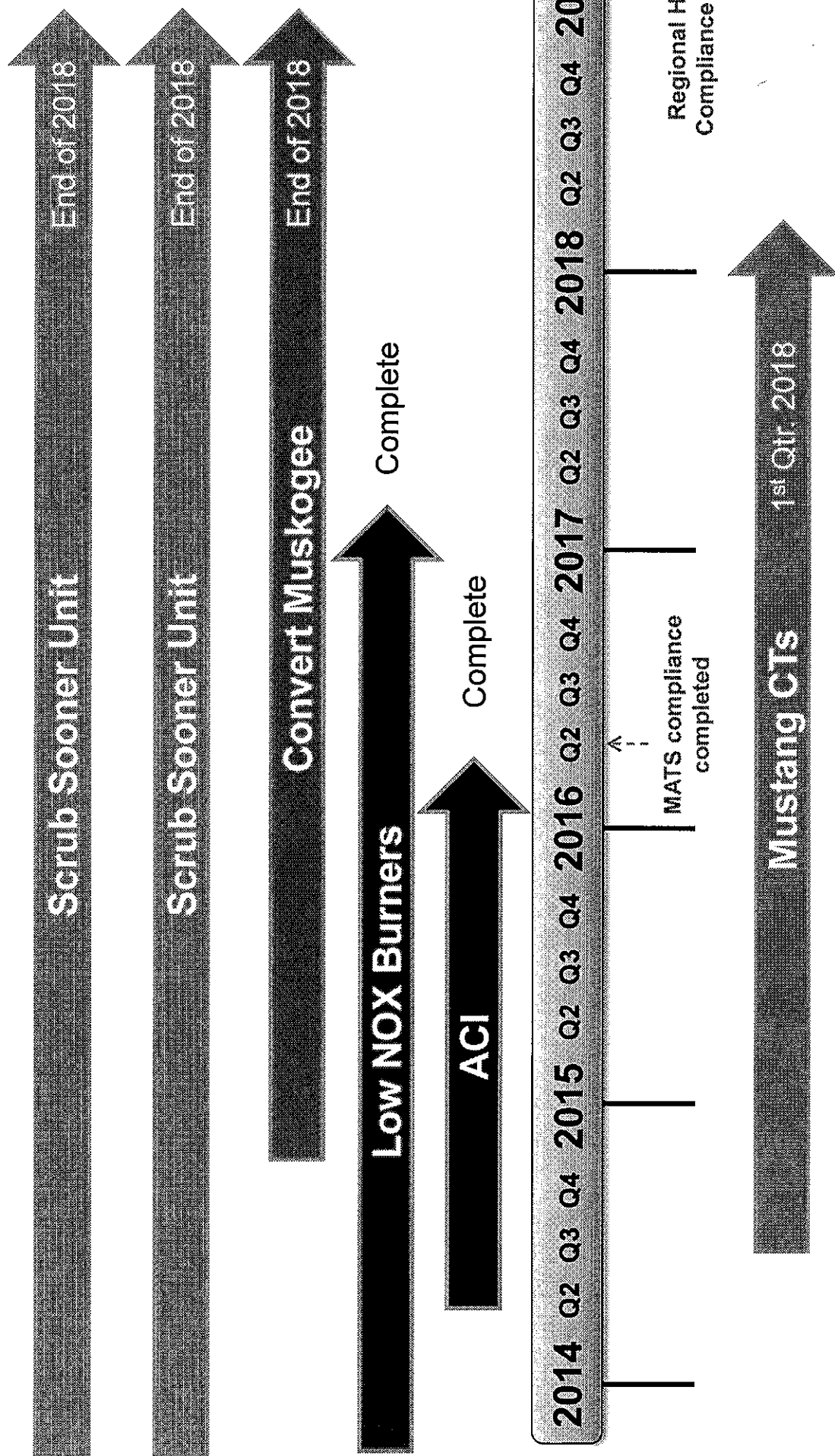
Source: OGE Energy 10K filings, Annual average of monthly bills

Customer Value



*Customer Impact is Oklahoma Retail Average Rate Comparison, EEI Typical Bills and Average Rates Report Summer 2017

Project Completion Schedule



Regional Haze compliance date is set 55 months from US Supreme Court decision. Clock restarted 5/29/2014 + 55 months = 1/4/2019.

Sooner Dry Scrubber Project

- On April 28, 2016, the Oklahoma Corporation Commission approved OG&E's application seeking approval to install scrubbers on two coal units at the Sooner Power Plant. *
- Scrubbers are expected to be completed by December 2018 and are currently forecasted to be on target with investment estimated to be \$542 million, including AFUDC.

February 2017



Completed



* There are two parties that are appealing the OCC's decision.

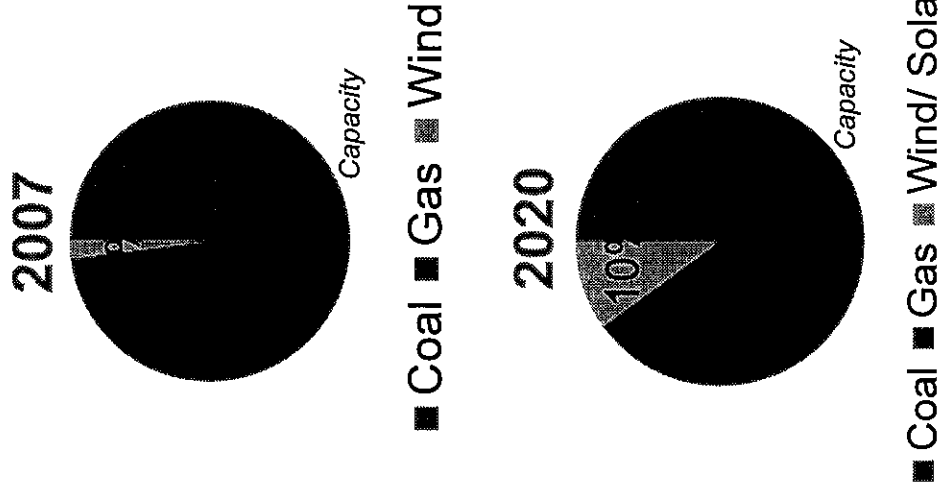
Mustang Modernization

- The existing natural gas steam units in Mustang will be retired and replaced with 7 natural gas fired combustion turbine units.
- The Mustang Combustion Turbines are expected to be completed by December 2017 and are currently forecasted to be on target with the originally filed costs
 - In OG&E's original filing, the estimated cost for the Mustang modernization was \$414 million excluding AFUDC and Ad Valorem
 - Total investment including AFUDC and Ad Valorem is estimated to be \$390 million, or \$355 million excluding AFUDC and Ad Valorem

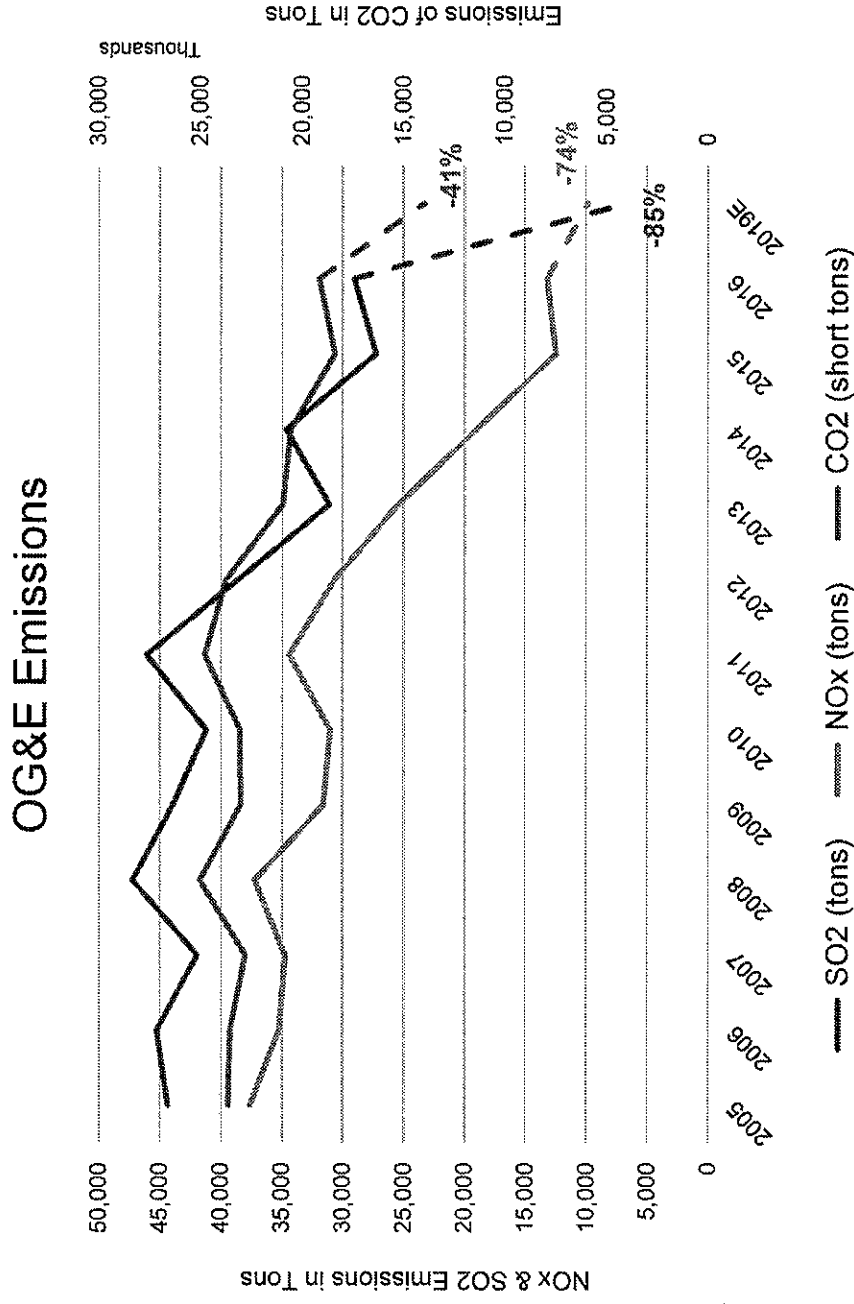


Cause No. PUD 201700496
 and TFB-3

OG&E is gradually shifting generation resources and reducing emissions while maintaining fuel diversity and we are not done...



Capacity figures include owned and PPA assets



57

2019 Emissions are estimated.

15

The Smart Grid is Empowering Customers

- New technology has allowed utilities to integrate, interface with and intelligently interact with the wires side of the business
- Benefits of this new technology include:
 - Ushering in a new era of customer choice such as the OGE Smart Hours Program
 - Outage response time improvement and prevention
 - Allows the seamless integration of wind and solar
 - Can make large scale energy storage a reality for the first time

Regulatory Overview

Oklahoma Corporation Commission



- 3 elected commissioners serve with 6 year terms
- Commissioner Anthony's current term ends in 2018
- Vice-Chairman Hiett's current term ends in 2021
- Chairman Murphy's current term ends in 2022
- OG&E has a 9.5% ROE with 53% equity layer

Arkansas Public Service Commission



- 3 appointed commissioners serve with 6 year terms
- Chairman Thomas was appointed in 2015
- Commissioner O'Guinn was appointed in 2016
- Commissioner Wills was appointed in 2011
- OG&E has a formula rate with 9.5% ROE and a 50% equity layer

FERC



- OG&E has a formula rate with 11.1% ROE and up to 56% equity for Transmission

Regulatory Framework

	Oklahoma	Arkansas	FERC
Formula rate plan		✓	✓
Forward/ projected test year	6 months	✓	✓
Interim rates	✓	✓	
Fuel recovery mechanism	✓	✓	
Environmental compliance rider		✓	
Storm cost recovery rider	✓		
Pension tracker	✓		
Demand program rider	✓		
SPP cost tracker	✓	✓	
Energy efficiency cost recovery rider	✓	✓	

Oklahoma Regulatory Schedule

Rate Case filed January 16, 2018 (*PUD201700496*)

- Recovery of the Mustang CTs and remaining Low-NOX units
- Mustang investment is approximately \$390M including AFUDC
- Test year ending September 2017 with pro forma adjustments to March 2018
- Rates implemented Mid-July 2018

Rate Case to be filed 4th Quarter 2018

- Recovery of the Scrubbers and Natural Gas Conversion
- Scrubber investment approximately \$542M, including AFUDC
- Test year ending September 2018 with pro forma adjustments to March 2019
- Rates implemented Mid-2019

OK Executive Order

Formation of the Second Century Corporation Commission Task Force

The Task Force will conduct an organizational analysis of the Oklahoma Corporation Commission. The findings and recommendations of the analysis are due November 15, 2018. The analysis will, at a minimum, include:

Assessment of the stated mission

- Accuracy in light of modern day functions; Appropriateness and necessity of current duties; If performance of certain functions is better suited for other agencies

Performance assessment

- Current workload levels; Time required to process workload and individual cases

Staffing assessment

- If the agency is properly staffed to meet its mission; If the staffing structure of the agency is efficient and effective; If the staff has autonomy and accountability needed to perform their duties

Funding assessment

- Whether the agency is properly funded; The current funding mechanisms available; Funding gaps within individual programs

Structural assessment

- Makeup of the Commission and the impact of the Open Meeting Act requirements; Trends related to terms of office; Appropriateness of the current number of Commissioners; Whether the Commission should be appointed, elected, or a combination thereof.

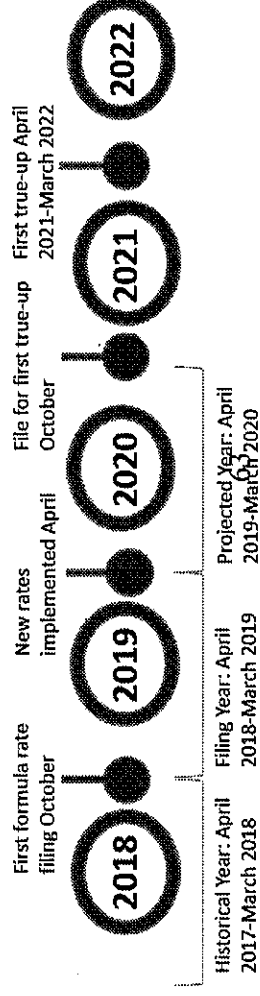
Arkansas Regulatory Schedule

Declaratory Order Finding Mustang Generation Plant Modernization Plan is Consistent with the Public Interest

- Mustang modernization found to be in the public interest
- Settlement approved by APSC on January 2, 2018

Formula Rate Filing in October 2018

- First filing will be in October 2018 with new rates implemented in April 2019; New rates will recover a projected year from April 2019 to March 2020
- First term is five years from the order date with an option to extend an additional five years
- 2016 GRC determines ROE and depreciation throughout the five year term
- Formula rate allows OG&E to earn the allowed ROE within 50 bps
- The limit for revenue earned is a 4% increase by class



Arkansas Regulatory Schedule

Act 310 Filings - Environmental

- Rider recovery mechanism for environmental compliance investments
- Filings can be made every 6 months as investments are placed into service
- Mechanism will be used for the recovery of the Sooner Scrubbers and Muskogee Natural Gas Conversion

Enable Midstream Partners

- Enable is performing well in a difficult commodity price environment
- Three strategic criteria when establishing the partnership
 - Large enough entity to stand on its own
 - Self funding – transformed from user of cash to provider of cash
 - Strong liquidity and balance sheet to weather commodity cycles
- We are committed to our investment in Enable

IDR Tier Structure:

	<u>Total Quarterly Distribution Per Unit Target Amount</u>	<u>Marginal Percentage Interest in Distributions</u>	
		<u>Unitholders</u>	<u>General Partner</u>
Minimum Quarterly Distribution	\$0.287500	100%	0%
First Target Distribution	up to \$0.330625	100%	0%
Second Target Distribution	above \$.330625 up to \$0.359375	85%	15%
Third Target Distribution	above \$0.359375 up to \$0.431250	75%	25%
Thereafter	above \$.431250	50%	50%

Tax Reform

Tax reform is positive for our customers and OGE

- OGE will benefit from the ownership in the Enable business
- There was an earnings benefit of \$1.23 related to the reduction of the Enable deferred tax liability
- On an ongoing basis, earnings from Enable will increase approximately \$0.08 per share annually due to the lower tax rate
- OGE has a strong cash position to handle the utility customer giveback
- Normalization rules will apply and the giveback will occur over the life of the assets
- OGE has minimal holding company debt
- OGE will not have any equity needs resulting from tax reform

Projected Capital Expenditures 2018 – 2022

Dollars in millions	2018	2019	2020	2021	2022
Transmission	\$ 90	\$ 50	\$ 50	\$ 50	\$ 50
Distribution:					
Oklahoma	215	165	165	165	165
Arkansas	10	20	50	60	60
Generation	55	130	95	75	75
Other	50	25	25	25	25
Total T&D, Generation & Other	\$420	\$390	\$385	\$375	\$375

Projects:

Environmental – Dry Scrubbers	\$95	\$20	-	-	-
Combustion Turbines – Mustang	35	-	-	-	-
Environmental – natural gas conversion	35	15	-	-	-
AFUDC and Ad Valorem	40	-	-	-	-
Grid modernization, reliability, resiliency, technology, and other	-	200	190	280	180
Total Projects	\$205	\$235	\$190	\$280	\$180
Total	\$625	\$625	\$575	\$655	\$555

Attorney General of Oklahoma
Data Request AG-12
Cause No. PUD 201700496

12-12 Please provide all presentations, filings, reports, and other documentation discussing the reliability of OGE's distribution network provided by or made by OGE employees to OGE's Board of Directors, OGE Energy Corporation's Board of Directors, OGE's senior management, OGE's large commercial or industrial ratepayers, the Oklahoma Corporation Commission, and industry/trade conference groups from October 1, 2016, to February 28, 2018.

Response*: Please see OIEC 3-1 for the prior years Annual Reliability Reports. Please also see attachment AG 12-12_Att.

Response provided by:	<u>Donald Rowlett</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

Reliability Conversation

January 29, 2018

Reliability Conversation Topics

- OG&E Reliability Ranking and Considerations
- Industry and OG&E Reliability Trends
- Peer Utility Reliability and Expenditures Comparisons
- Reliability and Customers Impact
- Momentary Interruptions

OG&E Reliability Ranking

SAIDI					
W/O Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		3rd	38.00	641.60	131.97
Regional		2nd	38.00	364.10	138.24
FPL Survey		4th	53.00	285.10	117.65
OGE		X	110.56	138.83	134.59
W/ Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		4th	38.00	2132.00	253.62
Regional		4th	38.00	901.51	279.45
OGE		X	796.50	901.51	609.06
CAIDI					
W/O Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		4th	33.4	298.0	113.7
Regional		4th	65.2	167.4	104.3
FPL Survey		4th	74.3	252.0	113.3
OGE		X	121.9	167.4	149.2
W/ Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		4th	44.38	658.02	174.58
Regional		4th	67.15	612.38	167.33
OGE		X	136.41	612.38	432.52

SAIFI					
W/O Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		2nd	0.40	2.77	1.13
Regional		1st	0.55	2.62	1.33
FPL Survey		2nd	0.50	2.10	1.05
OGE		X	0.88	0.92	0.90
W/ Major Events		OGE	2013-2015		
		Quantile	Best	Worst	Average
National IOU		3rd	0.400	3.507	1.361
Regional		2nd	0.790	3.469	1.676
OGE		X	0.950	1.470	1.290

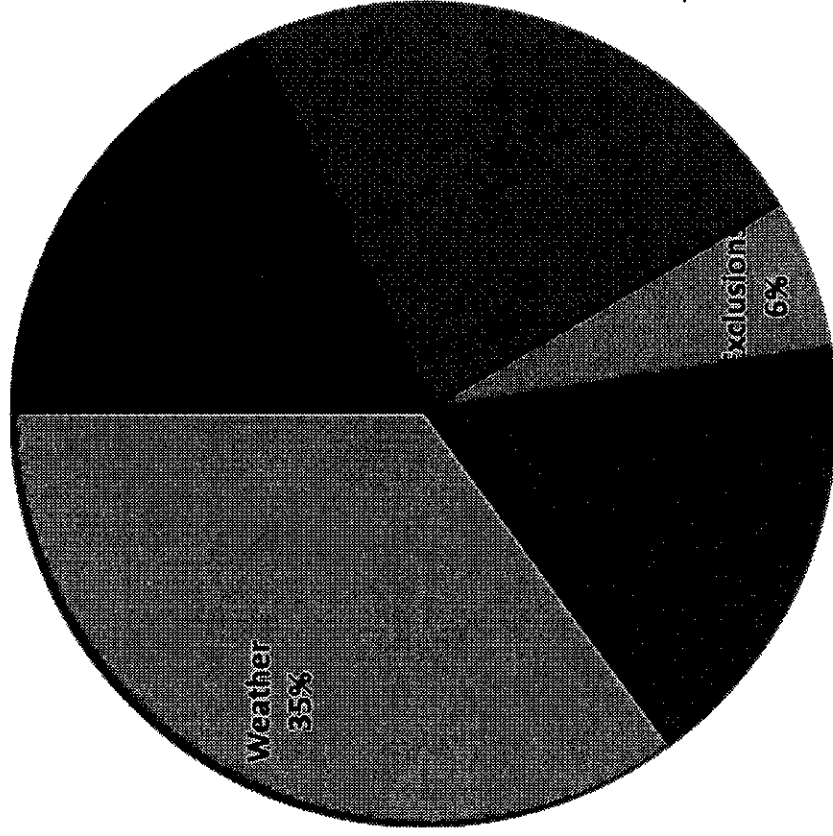
OG&E Reliability Considerations

- Weather
 - Nationally OG&E is number 1 for adverse utility weather (ice, lightning and wind)
 - Weather accounts for 34% of outages and 40% (62 mins) of SAIDI.
 - Lightning alone is 24% (37 mins) of SAIDI.
- Geographic Density
 - OG&E has 18 customers per mile compare to the Southern Companies survey averages of 31
 - ONCOR is 32; Ameren is 27; KCPL is 24; PSO is 24; Entergy AR is 19; Weststar is 13.
- IEEE 1366
 - The IEEE 1366 2012 (2.5 Beta) does not always fairly normalize our weather conditions
 - OG&E Tmed is 7.4 minutes vs SEE industry average is 3.8 minutes

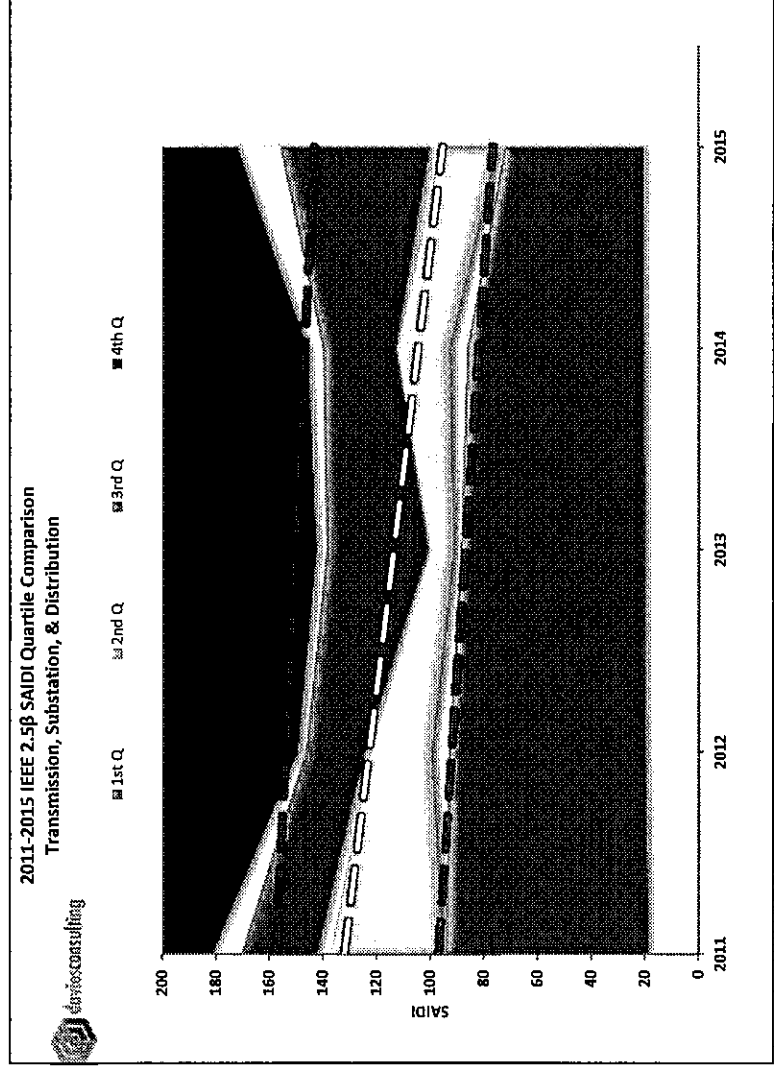
Weather Rankings by State

Rank	City	Annual Wind Speed Rank	Lightning Density Rank	Ice Severity Rank	Total W-L-I Score
1	Oklahoma City	6	11	10	27
2	Dodge City	1	25	8	34
3	Tulsa	15	11	10	36
4	Des Moines	9	28	5	40
5	Dallas	9	20	12	41
6	Charleston	33	7	4	44
7	Chicago	14	16	15	45
8	Atlanta	23	10	13	46
9	Boston	4	42	1	47
10	Amarillo	2	20	28	50
11	Sioux Falls	8	36	9	53
12	Kansas City	11	13	32	56
13	Dayton	17	19	21	57

2016 Outage Incidents by Cause Category

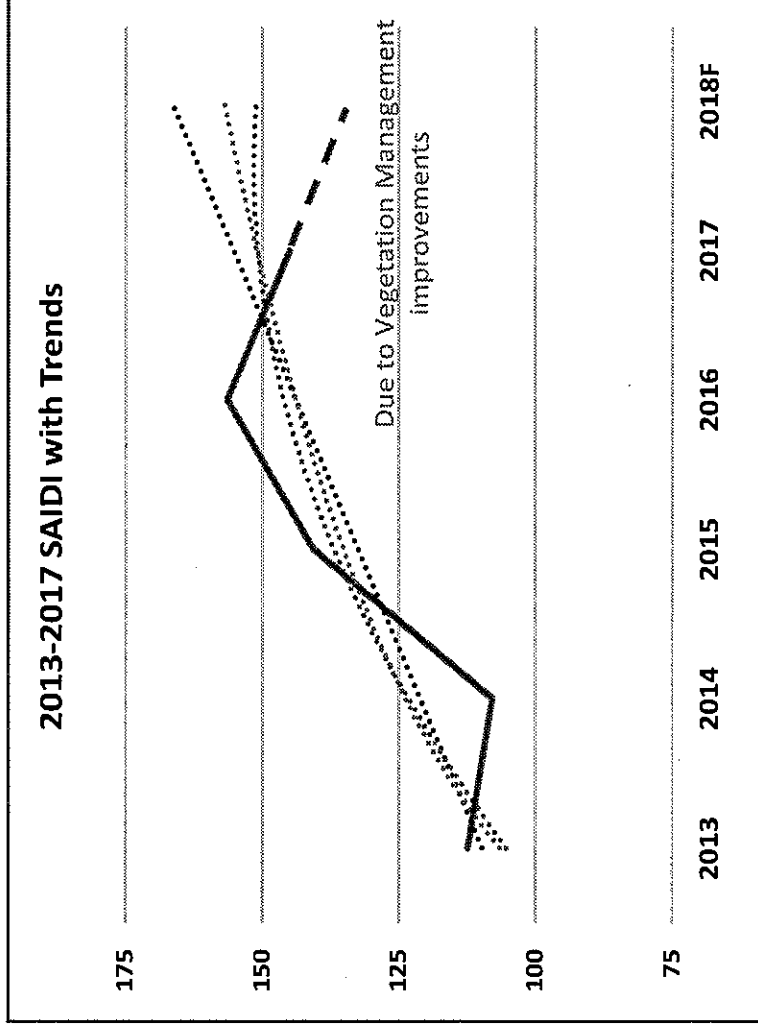


Industry Trends



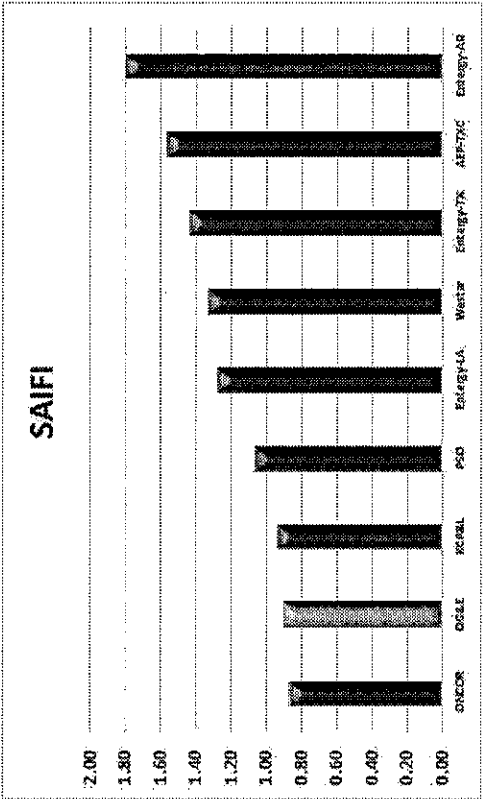
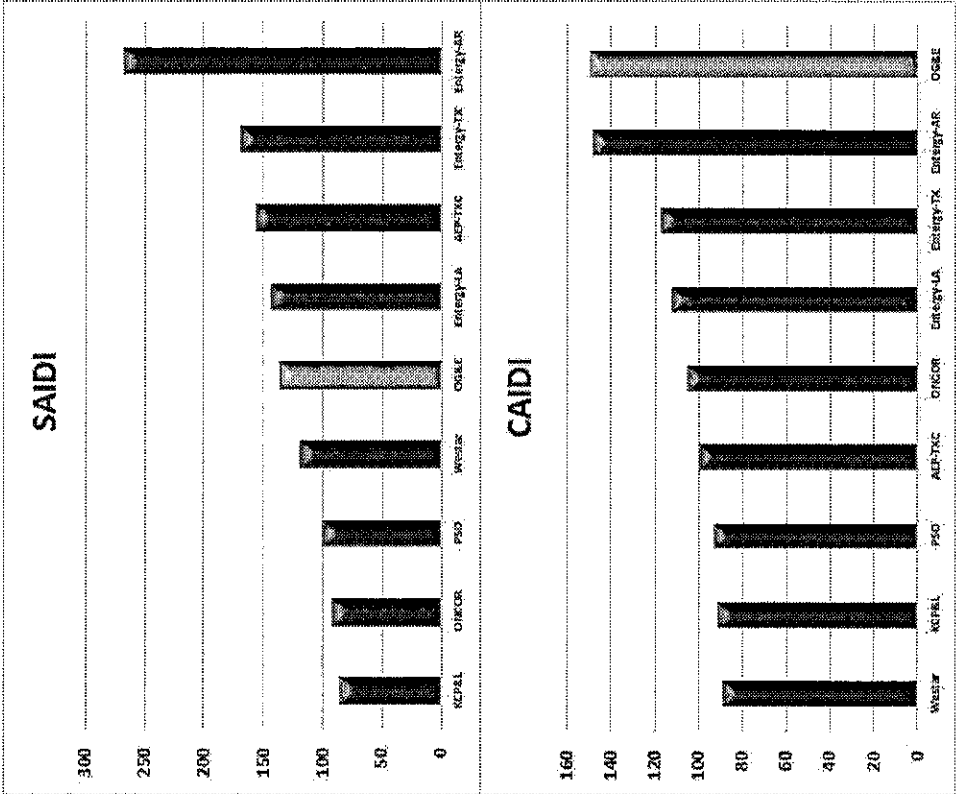
SAIDI	2011	2012	2013	2014	2015	Trend Line Slope [2011 - 2015]
Max Value	602.08	457.98	430.71	505.29	467.79	-22.13
3rd Q	170.27	146.19	138.42	139.90	155.63	-3.56
2nd Q	136.74	122.40	100.04	112.48	96.00	-9.14
1st Q	94.03	92.89	88.39	86.12	72.19	-5.05
Min Value	18.65	19.80	20.19	20.48	20.95	0.53

OG&E Trends



Cause 2012-2015, 2014-2015	5 Year Average	3 Year Average	5 Year Linear Increase	3 Year Linear Increase
Weather	46	48	4	13
Equipment Infrastructure	27	30	4	6
Vegetation	20	23	3	9
Animals	6	7	1	0
Totals	99	108	12	22

Reliability Regional Comparison



Data Information
Source: Energy Information Administration
Data Years: 3 Year Average (2013 -2015)
Method: IEEE 1366 2012 (2.5 Beta)
FPL 2015: SAIDI=61; SAIFI=1.14; CAIDI=54
OG&E 2016: SAIDI=147; SAIFI=0.99; CAIDI=147

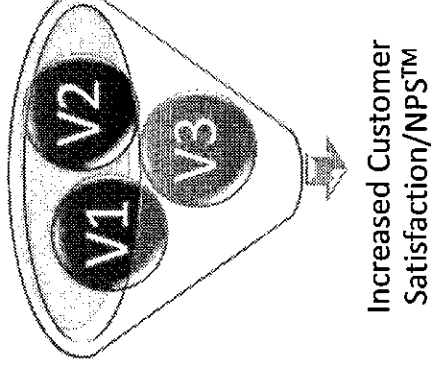
Understanding Customer Expectations

Understand customers' expectations and satisfaction/loyalty in terms of power quality and reliability.

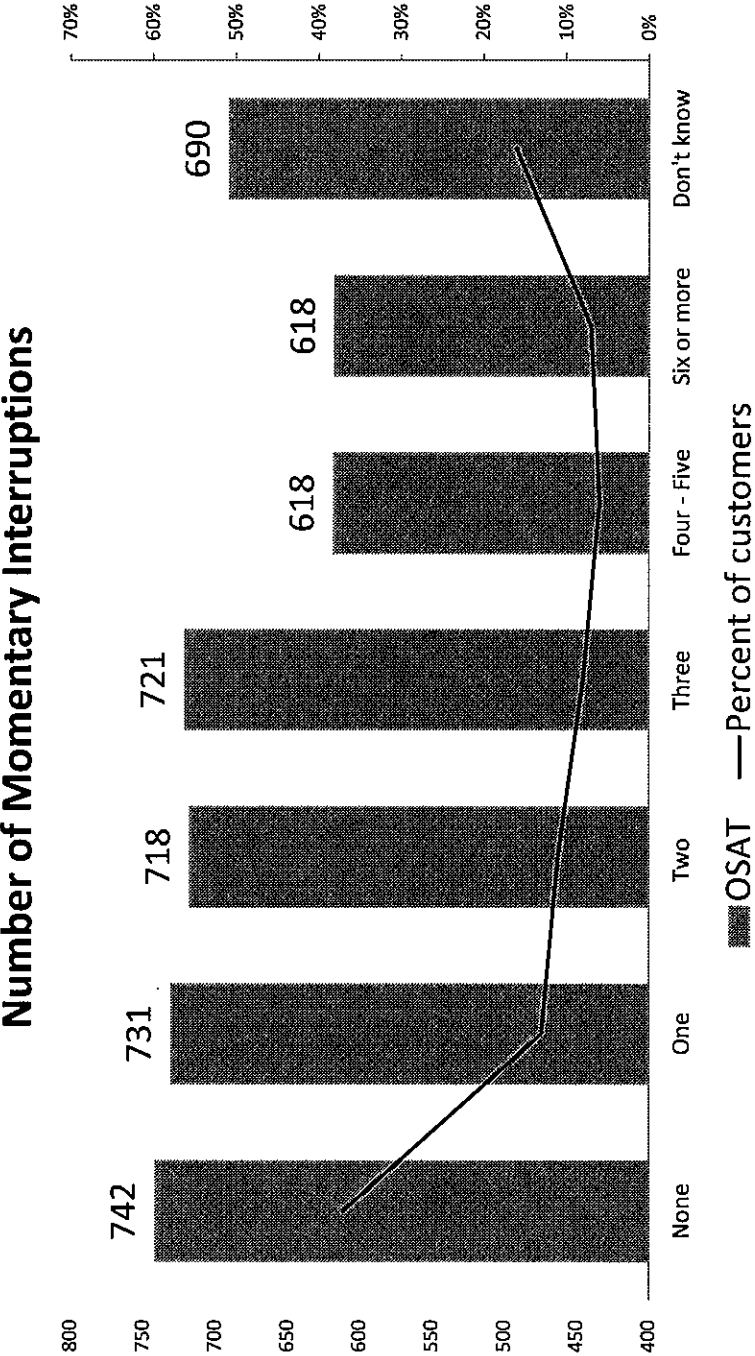
Considers factors that drive customer satisfaction, ultimately identifying areas where improvement may deliver desirable results for the customer.

A multi-pronged approach is taken:

- **Perceived** power reliability (JD Power)
- **Actual** power reliability (NPS)
- **Expected** power reliability (2011 Research)



JD Powers Customer Satisfaction vs Momentary Interruptions



System Reliability Targets

Industrial Customers Summary Data				
Metric	Momentary	Sustained	Total	Per Customers
Current Year to Date (YTD)	210,033	16,862	226,895	24.7
Last Year To Date	253,410	21,025	274,435	30.9
12 Month Rolling Avg	210,033	16,862	226,895	24.7
End of Year Forecast	210,033	16,862	226,895	24.7
Last Year Total	253,410	21,025	274,435	30.9

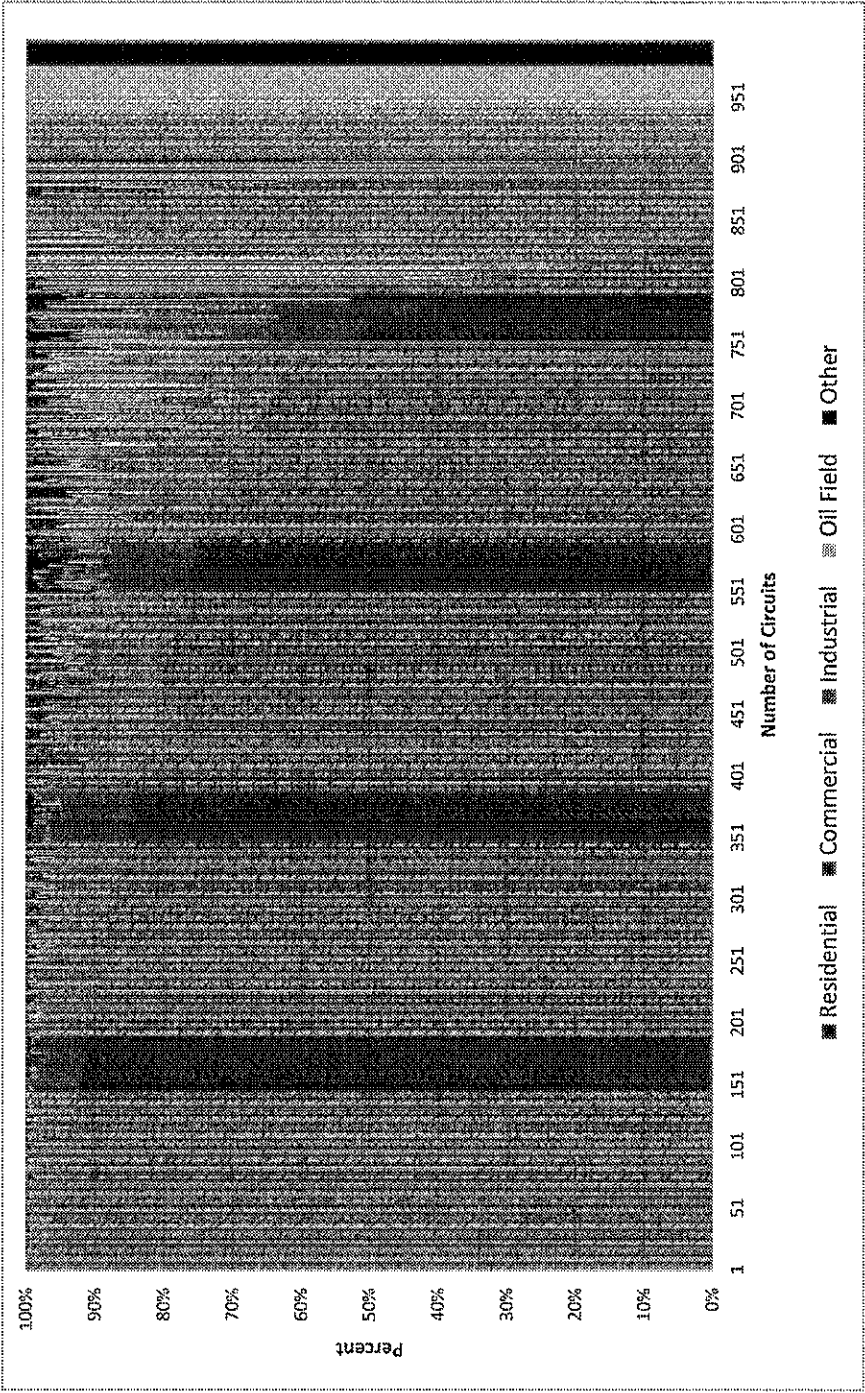
Commercial Customers Summary Data				
Metric	Momentary	Sustained	Total	Per Customers
Current Year to Date (YTD)	2,613,618	149,479	2,763,097	27.6
Last Year To Date	2,601,379	153,697	2,755,076	27.8
12 Month Rolling Avg	2,613,618	149,479	2,763,097	27.6
End of Year Forecast	2,613,618	149,479	2,763,097	27.6
Last Year Total	2,601,379	153,697	2,755,076	27.8

Definition:

Interruptions – All recorded power interruptions from momentariness (blinks) to sustained outages

- Momentariness are less than 5 minutes and sustained outages are equal to or greater than 5 minutes
- Sustained outages are approximately 0.1% of all interruptions

Circuits by Customer Segments



2016 Worst Interruptions by Circuits Review

- Removed the 50 worst meters to review circuit performance (suspect bad meters)
- Highlighted rows are common between the 2 groups

Top 25 Worst Commercial Circuits for Interruptions			
Rank	Circuit	Worst Meter Interruptions	Interruptions
1	BRISTOW 22 770622	342	15,765
2	KELLYVILLE 24 32024	185	16,528
3	WALNUT CREEK 21 506021	244	15,353
4	TARRY 25 351625	225	14,850
5	WOODLAWN 23 836023	304	13,930
6	SW 5TH ST 64 824864	522	13,287
7	BECKMAN RD 61 497161	140	12,897
8	SOUTHWARD 47 890647	210	12,720
9	EL RENO 22 890522	251	12,473
10	DUNIFF 23 841623	289	12,172
11	TENNYSON 22 311422	191	12,012
12	MIDWAY 61 852261	254	11,976
13	SIMMONS 61 933061	347	11,892
14	SARA 69 815869	387	11,148
15	KNOB HILL 22 470722	208	10,902
16	SAPULPA 21 370521	769	10,893
17	BECKMAN RD 61 497161	276	10,448
18	FOUNDATION 33 510433	232	10,358
19	TWIN BRIDGES 21 934021	235	10,008
20	TENNYSON 23 311423	185	9,948
21	RIVERSIDE 24 311024	181	9,889
22	LONE GROVE 24 512524	256	9,555
23	MIDWAY 29 852229	223	9,139
24	BRANCH 63 922463	150	9,127
25	TOWER HEIGHTS 23 510723	231	9,093
Totals:		6,337	239,434

Top 25 Worst Industrial Circuits for Interruptions			
Rank	Circuit	Worst Meter Interruptions	Interruptions
1	KELLYVILLE 24 32024	70	5,439
2	DRUMRIGHT 41 760541	77	2,815
3	SASAKWA 29 750629	71	2,760
4	BRISTOW 22 770622	75	2,419
5	DUNDEE 22 532222	75	2,362
6	COUNTY LINE 21 530621	70	2,274
7	HEALDTON 23 530523	89	2,196
8	DEER CREEK 48 424048	42	2,057
9	JUMPER CREEK 25 731225	85	2,022
10	HENNESSEY 23 441423	90	1,977
11	WEWOKA 24 750524	75	1,937
12	PEARSON 21 741221	69	1,864
13	SASAKWA 22 750622	38	1,794
14	BOWDEN 29 321329	48	1,773
15	BRISTOW 21 770621	56	1,765
16	COUNTY LINE 27 530622	105	1,759
17	BECKMAN RD 61 497161	21	1,684
18	JENSEN RD 69 892169	25	1,512
19	JAMESVILLE 21 331621	51	1,492
20	DRUMRIGHT 44 760544	83	1,489
21	LONE STAR 22 321422	38	1,453
22	WEWOKA 21 750521	56	1,408
23	WAIKOMIS 24 410924	54	1,388
24	JENSEN RD 61 892161	47	1,334
25	BYNG SPA 22 581322	52	1,377
Totals:		1,562	50,400

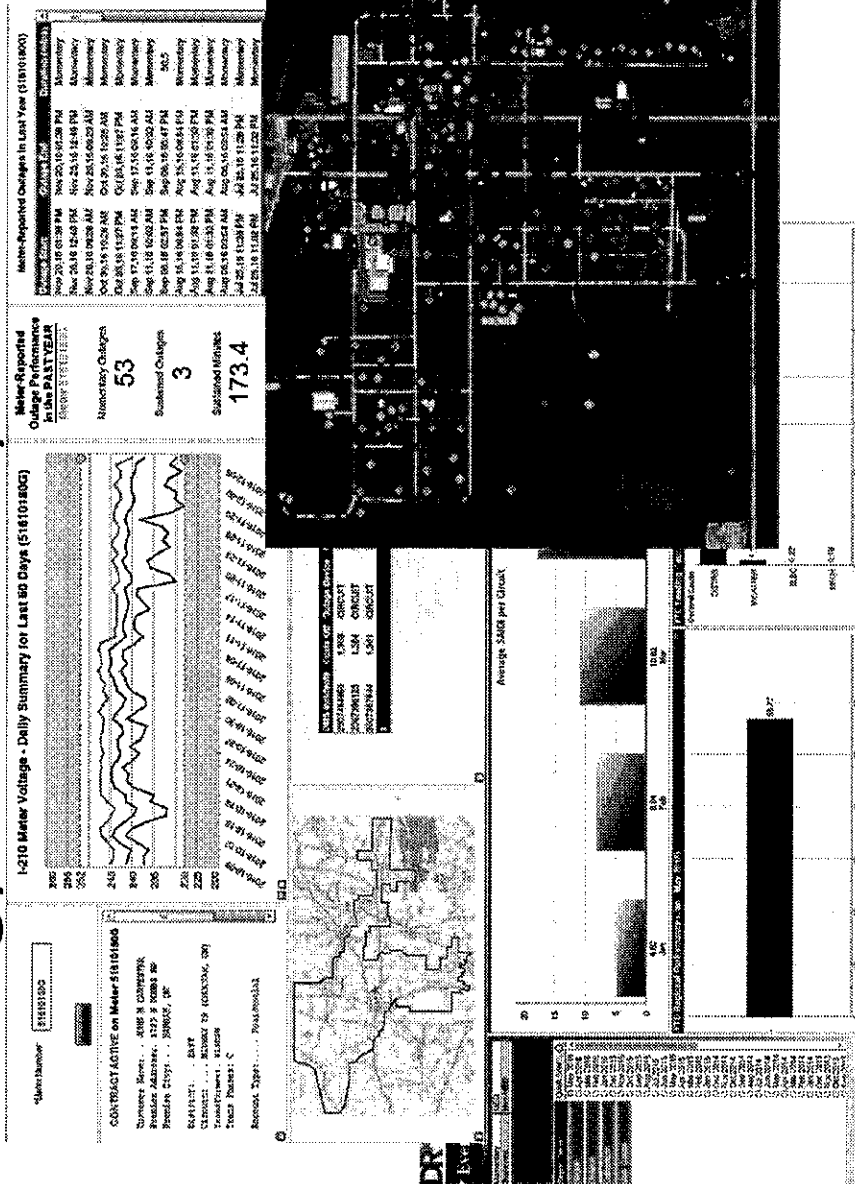
Commercial and Industrial Customers Interruptions Improvements

- The discovery was the top 50 worst meters could reduce the total interruptions for commercial by 16% or 445,000 and for industrial 41% or 102,000
- The results are that we could pinpoint these problem meters and resolve those issues with minimal cost. The findings are:
 - Internal meter component failure, premature meter failure problems, meter fraud, poor meter base and secondary connections
 - C&I customers may not be experiencing all the recorded interruptions
 - 98% reduction in recorded interruptions of the individual meter issues resolved to date
 - Most meter cases are getting resolved for under \$500 including labor and materials

Appendix

Supporting Data

Technology: Data Analytics



Reliability Definition and Metrics

- **Reliability:** Probability an asset will perform its intended function for a specific interval under stated conditions
 - **SAIDI** (System Average Interruption Duration Index)
 - Average time the customers are without power over a period of time
 - **SAIFI** (System Average Interruption Frequency Index)
 - Average number of outages per customer
 - **CAIDI** (Customer Average Interruption Duration Index)
 - Average outage time per customer
 - **CMI** (Customer Minutes of Interruption)
 - Total minutes of interruption for all customers affected
 - **MAIFI** (Momentary Average Interruption Frequency Index)
 - Average number of momentary interruptions (less than 5 minutes) that a customer experiences during a given time period
 - **CI** (Customers Interrupted)
 - Number of customers with loss of power for any frequency (blinks, outages)

Oklahoma Gas and Electric Company
System Average Interruption Duration Index

Utility	2016	2015
City of Edmond - (OK)	40	33
Stillwater Utilities Authority	46	28
City of Ponca City - (OK)	57	103
Public Service Co of Oklahoma	100	112
Oklahoma Gas & Electric Co	158	137
City of Edmond - (OK)	40	33
OGE -- East	142	131
OGE -- North	126	151
OGE -- West	101	121
Stillwater Utilities Authority	46	28
City of Ponca City - (OK)	57	103
OGE -- Enid	206	118

Source: EIA Form 861, Company Response to DR OIEC-OGE-3-1, Company Response to DR AG-OGE-5-1

Oklahoma Gas and Electric Company
System Average Interruption Frequency Index

Utility	2016	2015
City of Edmond - (OK)	0.663	0.430
Stillwater Utilities Authority	0.900	0.400
Oklahoma Gas & Electric Co	1.000	0.900
City of Ponca City - (OK)	1.021	1.250
Public Service Co of Oklahoma	1.144	1.171
City of Edmond - (OK)	0.663	0.430
OGE -- East	1.300	0.680
OGE -- North	0.760	0.880
OGE -- West	0.790	0.920
Stillwater Utilities Authority	0.900	0.400
City of Ponca City - (OK)	1.021	1.250
OGE -- Enid	1.060	0.970

Source: EIA Form 861, Company Response to DR OIEC-OGE-3-1, Company Response to DR AG-OGE-5-1

Oklahoma Gas and Electric Company
Appearances on 50 Worst Performing Circuits List
2013-2017

Appearances	Circuits
5	0
4	4
3	14
2	38
1	116

Source: Company response to DR AG-OGE-13-3

Oklahoma Gas and Electric Company
Value of Missed Reliability Targets

Cause No. PUD 201700496
Exhibit TFB-5
Page 4 of 4

Customer Class	Target (\$M)	Actual (\$M)	Difference (\$M)
Residential	\$5.1	\$5.2	\$0.1
Small Commercial and Industrial	\$90.3	\$107.9	\$17.6
Large Commercial and Industrial	\$81.1	\$91.2	\$10.1
Total	\$176.5	\$204.3	\$27.8

Attorney General of Oklahoma
Data Request AG-12
Cause No. PUD 201700496

12-12 Please provide all presentations, filings, reports, and other documentation discussing the reliability of OGE's distribution network provided by or made by OGE employees to OGE's Board of Directors, OGE Energy Corporation's Board of Directors, OGE's senior management, OGE's large commercial or industrial ratepayers, the Oklahoma Corporation Commission, and industry/trade conference groups from October 1, 2016, to February 28, 2018.

Response*: Please see OIEC 3-1 for the prior years Annual Reliability Reports. Please also see attachment AG 12-12_Att.

Response provided by:	<u>Donald Rowlett</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

Utility Operations KPIs

Key Result	Key Metric/Drivers	2017		
		Actual YTD	Target	Notes
Customer	New Business % Met Target	71%	70%	See T&D Ops Scorecard
Customer	New Business % Met Customer Due Date		75%	See T&D Ops Scorecard
Customer	SAIDI (12 month rolling average)		114	See T&D Ops Scorecard
Customer	CAIDI (12 month rolling average)		114	See T&D Ops Scorecard
Customer	Locations Energized by ETR (%)		90	See T&D Ops Scorecard
Customer	Distribution Project Mgmt Net Promoter Score	65	40	See T&D Ops Scorecard
Customer	Generation Performance to Obligation (% of time units are within +/- 5MWH's of target)	90.5	90	See Power Supply Scorecard
Customer	Generation EFOR (%)	4.8	5.8	

AD1

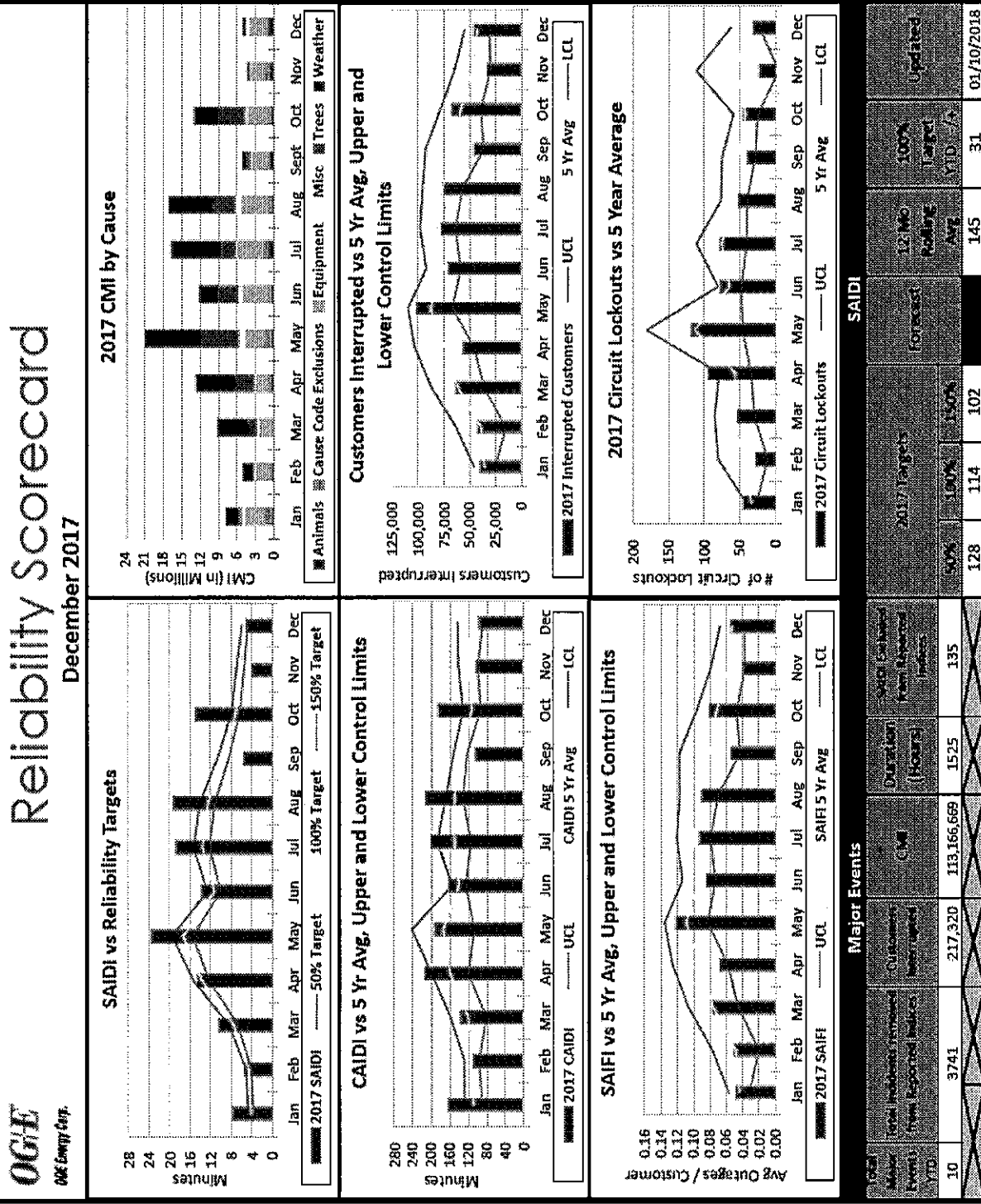
Utility Operations KPIs

Key Result	Key Metric/Drivers	2017		
		Actual YTD	Target	Notes
O&M	Cost Performance CI Cost Savings (\$k)	3,100	2,000	
Compliance	NERC Transmission Mis-Operations (%)	10.4	<10	
Compliance	T&D Ops FERC Testing (%)	100	100	See T&D Ops Scorecard
Compliance	Generation Opacity (%)	0.3	1.0	
Safety	T&D Ops Operational Incidents (at fault)		0	See T&D Ops Scorecard
Safety	TeamShare Recordable Incidents (#)		0	See T&D Ops Scorecard
Safety	Ops Chargeable Vehicle Accidents (#)		0	See T&D Ops Scorecard
Safety	Near Miss Reporting (#)		42	See T&D Ops Scorecard

Slide 2

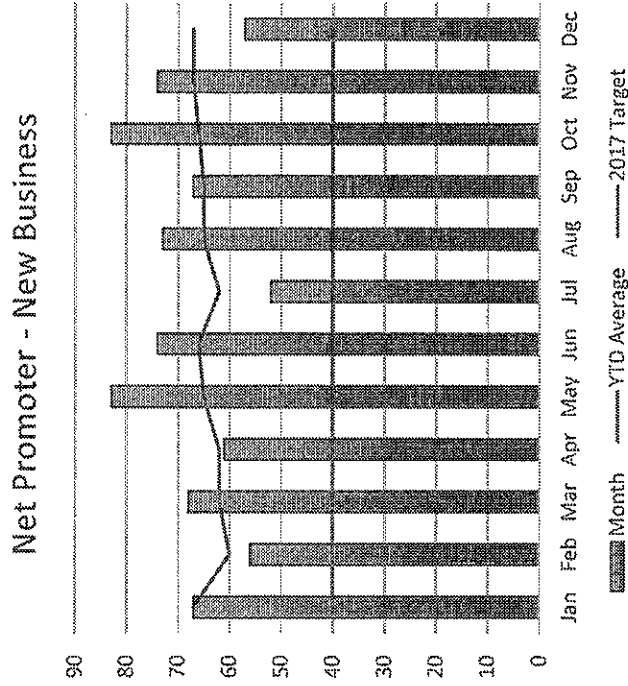
AD1 Andrea Dennis, 7/26/2016

T&D Operations



Net Promoter Score – New Business

	Current Month	YTD
NPS	57	67



Data Analysis of Customer Feedback

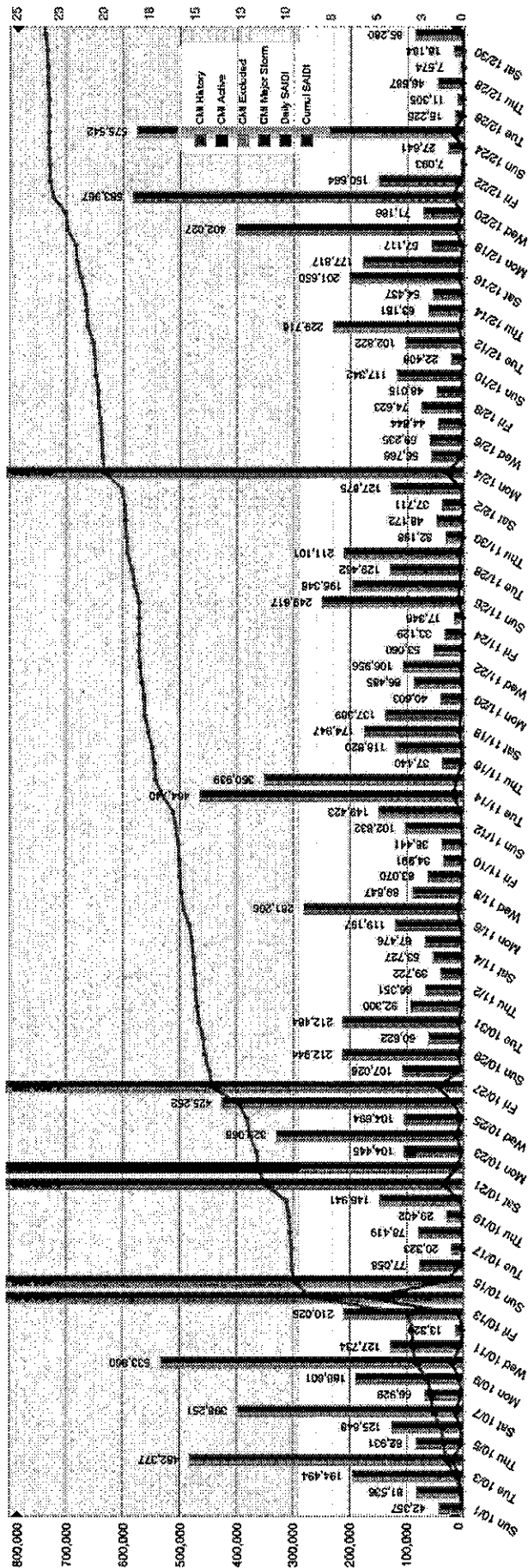
- Highest correlation (.74) between Satisfaction with PM and Recommend OGE
 - Qualitative data suggest that quality communication from PM overcomes any project slippage or perceptions.
- Areas of Opportunity identified with Project Manager
 - Increased Communication with regards to Project Plans

Cycle Time – New Business

- We have seen an overall improvement in achieving the customer's original request.
 - Improved performance in the small commercial and small residential projects.
 - These two areas represent the largest volume of project work
 - In most case, met or exceeded the targets
- 4th Quarter cycle time initiatives
 - Phase 1 of Project Initiation
 - Customers are able to initiate a project online @ www.OGE.com/NewConstruction
 - All appropriate information will be gathered to determine the appropriate OGE member to work the project
 - We have seen a cycle time improvement of 3 days on projects initiated through the portal
 - Begin Phase 2 Developments
 - Creating Builders/Developers Portal for Repeat Customers
 - Improved web page with more construction relevant information. (Standards, Expectations)
 - Minor Modifications based on Customer Feedback
 - Re-aligning Customer Reps to Project Management workgroup
 - Ensures the right visibility and accountability to project workload and tracking of project status
 - Ability to levelize work to ensure customer satisfaction.
 - Reduction in ticket volume as a result of Project Initiation. General inquiries are being addressed by NCR versus work ticket. (Truck Roll Reduction)

MATS	Cycle Time				
	# of Orders	Target	YTD Avg	% Met Target	% Met Orig Cust Date
Comm/Ind Large	85	65	52	73%	71%
Comm/Ind Small	658	45	43	68%	71%
Decorative Light - Small	11	65	94	27%	64%
Large URD	21	110	100	62%	62%
Oil Field - Large	6	90	63	67%	83%
Oil Field - Small	102	30	43	30%	85%
Res - Large (non-URD)	29	35	42	41%	93%
Res - Small (non-URD)	653	30	31	61%	68%
Security Light	340	30	35	63%	47%
Small URD	45	65	67	60%	64%
Street Light	97	60	58	64%	61%
Thoroughfare Lighting	0	90			
UG Srvce/Meter*	1456	14	12	84%	83%
TOTAL	3503	29	29	71%	73%

Daily Customer Minutes of Interruption (CMI)



2017 Strategy Deployment Goal and Activities

2017 Strategy Deployment Goals

Goal Area	Activities
Grid Modernization and Automation – Protect the Customer's Bill	<p>Deliver value by reducing operational and capital costs; optimizing asset utilization and efficiency; anticipating and responding to system disturbances and failures; accommodating intermittent and distributed energy resources; and, enabling new products and services.</p> <ul style="list-style-type: none"> Update grid vision and road map through the year 2022 to provide an end-to-end unified view of business that improves grid reliability, maximizes financial performance and enhances customer experience. Complete by April 2017. <ul style="list-style-type: none"> Complete Align organization to facilitate efficient integration of grid and other technologies. Complete by July 1, 2017. Continue design and execution of the grid platform (DMS/OMS/EMS/CADS) upgrade to support Grid 2022 <ul style="list-style-type: none"> DMS PHASE 1 complete by March 1, 2017; Phase 2 by January 1, 2018. <ul style="list-style-type: none"> Complete. On June 20, the DCC began using the OSI DMS. OMS Replacement by January 1, 2019. <ul style="list-style-type: none"> Currently in Build Phase. Go-live scheduled for October/November 2018. CADS create statement of work by August 1, 2017. <ul style="list-style-type: none"> Identified potential solution.
T&D Reliability – Grow the Value of OG&E's Products	<p>Deliver value by achieving a system wide SAIDI reliability of 128 minutes or less.</p> <ul style="list-style-type: none"> Develop and begin implement a vegetation management plan that optimizes available resources to improve SAIDI performance. Complete by March 1, 2107. <ul style="list-style-type: none"> Complete and in implementation. Develop and implement a labor resource model to allow proactive positioning of resources ahead of forecasted weather impacts. Complete initial version by March 1, 2017. <ul style="list-style-type: none"> Complete and in implementation. Develop use and business cases for deployment for proven technologies such as Fault Location and Fault Isolation. October 1, 2017. <ul style="list-style-type: none"> Complete and rolled into Grid Modernization.

Attorney General of Oklahoma
Data Request AG-12
Cause No. PUD 201700496

12-12 Please provide all presentations, filings, reports, and other documentation discussing the reliability of OGE's distribution network provided by or made by OGE employees to OGE's Board of Directors, OGE Energy Corporation's Board of Directors, OGE's senior management, OGE's large commercial or industrial ratepayers, the Oklahoma Corporation Commission, and industry/trade conference groups from October 1, 2016, to February 28, 2018.

Response*: Please see OIEC 3-1 for the prior years Annual Reliability Reports. Please also see attachment **AG 12-12_Att.**

Response provided by:	<u>Donald Rowlett</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

OG&E ANNUAL RELIABILITY REPORT

SUBMITTED TO
THE OKLAHOMA CORPORATION COMMISSION
PURSUANT TO OAC 165:35-25

February 28, 2018

Executive Summary

This document, submitted by Oklahoma Gas and Electric Company to the Oklahoma Corporation Commission, serves as both the Annual Reliability Report (OAC 165:35-25-20) and the Annual Vegetation Management Plan (OAC 165:35-25-15) for the year 2018. All reliability calculations and documentation of program results apply to the calendar year 2017, while all submitted plans apply to 2018.

In 2017, Oklahoma Gas and Electric Company's Oklahoma System Average Interruption Duration Index was 144 minutes. The Company's Oklahoma System Average Interruption Frequency Index was 0.867. (See Appendix A: Reliability Indices Definitions for index descriptions). The System Average Interruption Duration Index performance of 144 minutes was a performance improvement from 2016. The occurrence of several extreme storm events have been excluded from reported reliability indices pursuant to Oklahoma Corporation Commission rules. (See Table 3: Major Events Excluded in 7).

Any correspondence regarding this report or the reliability programs should be directed to:

David Dyke

Manager, Regulatory Relations
and Compliance

PO Box 321 M/C 1212
Oklahoma City, OK 73101

(405) 553-3269
dykedr@oge.com

OG&E Annual Reliability Report

Table of Contents

1. System Description.....	1
2. System Reliability.....	1
2.1. Reliability Indices.....	2
2.2. MAIFI.....	3
2.3. Major Events Excluded from Indices.....	3
2.4. Performance Levels.....	4
3. Reliability Program.....	5
3.1 Vegetation Management Program.....	5
3.1.1 Activities.....	5
3.1.2 Calendar of Activities.....	6
3.1.3 Implementation Plan.....	6
3.1.4 Criteria to Assess Results.....	6
3.1.5 Company Representative knowledgeable about the plan.....	6
3.2 Circuit Reliability Program.....	7
3.2.1 Worst Performing Circuits in 2017.....	8
3.2.2 Reliability Program Results (2016 Worst Performing Circuits).....	9
Appendix A: Reliability Indices Definitions.....	11
Appendix B: Table of 2017 Reliability Indices.....	12
Appendix C: Vegetation Management - 2017 Summary of Activity.....	13
Appendix D: Vegetation Management - 2018 Detailed Plan.....	17

LIST OF FIGURES

Figure 1: Map of OG&E Operating Districts in Oklahoma	1
Figure 2: Historical SAIDI and SAIFI and Base Performance Levels	4

LIST OF TABLES

Table 1: SAIDI & SAIFI Values for Oklahoma Service Territory in 2017	2
Table 2: SAIDI & SAIFI Values in 2017 by Oklahoma District	2
Table 3: Major Events Excluded in 2017	3
Table 4: Performance Level Comparison of 2017 Indices.....	4
Table 5: Vegetation Management Spending in 2017.....	5
Table 6: Worst Performing Circuits in 2017.....	8
Table 7: Reliability Program Results for 2016 WPCs.....	9
Table 8: Oklahoma Reliability Indices 2017	12
Table 9: Summary of Activity, Vegetation Management 2017	13
Table 10: Vegetation Management Detailed Plan 2018.....	17

1. SYSTEM DESCRIPTION

Pursuant to OAC 165:35-25-20(b)(6)

In 2017, Oklahoma Gas and Electric Company ("OG&E") served approximately 838,000 customers in Oklahoma and western Arkansas (over 769,000 in Oklahoma). The transmission and distribution system to serve these customers covers 30,000 square miles. The OG&E service territory in Oklahoma is divided into 26 operating districts, as shown below in Figure 1. The entire OG&E system is comprised of more than 1,000 distribution circuits.

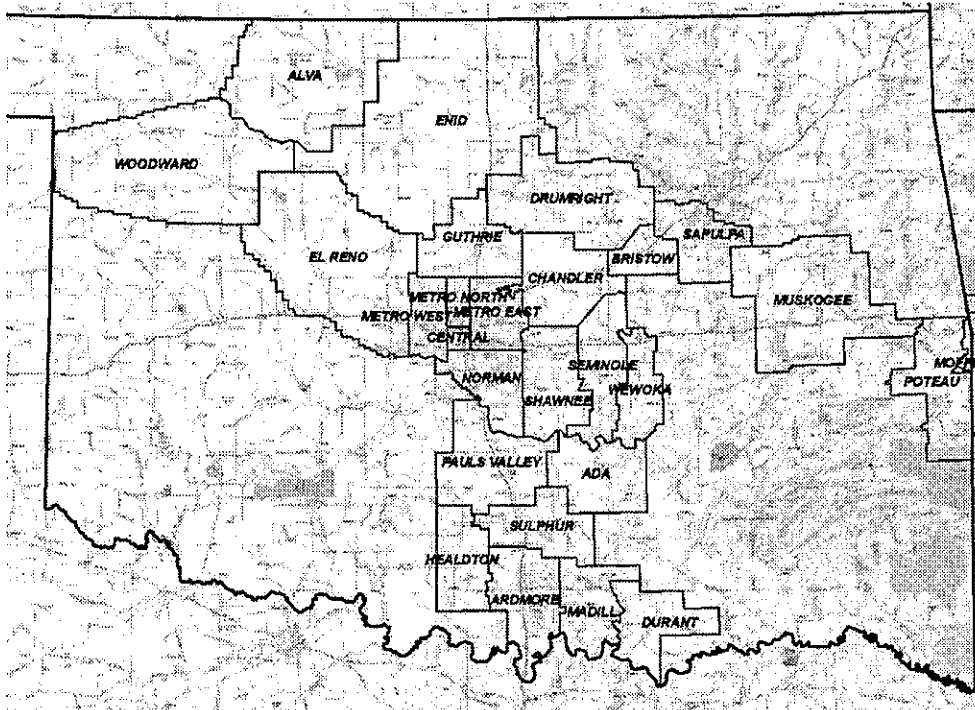


Figure 1: Map of OG&E Operating Districts in Oklahoma

2. SYSTEM RELIABILITY

The following sections present reliability indices measuring the relative performance of the distribution system under normal operating conditions. (See Appendix A: Reliability Indices

Definitions for details). Major weather events, that would significantly skew the measurements, as defined in OAC 165:35-25-13, have been excluded. (See Table 3: Major Events). System reliability is measured with two indices: System Average Interruption Duration Index ("SAIDI") and System Average Interruption Frequency Index ("SAIFI"). SAIDI measures the average time per year in which OG&E customers are without service. SAIFI measures the average number of interruptions a customer experiences. Two important principles must be considered in interpretation of these indices. First, reliability indices are useful for benchmarking portions of the system over time for the purpose of improvement but tend not to be an effective metric for comparison with other utilities due to differences in environment, configuration, and customer density. Second, measures of availability and reliability are relative to customers, in terms of being sufficient or satisfactory.

2.1.RELIABILITY INDICES

Pursuant to OAC 165:35-25-20(b)(2)&(3)

Table 1: SAIDI & SAIFI Values for Oklahoma Service Territory in 2017

TERRITORY	SAIDI	SAIFI
OKLAHOMA	144	0.867

Table 2: SAIDI & SAIFI Values in 2017 by Oklahoma District

DISTRICT	SAIDI	SAIFI
ADA	160	0.64
ALVA	70	0.50
ARDMORE	121	0.65
BRISTOW	191	1.37
CHANDLER	257	1.14
DRUMRIGHT	296	0.89
DURANT	111	1.06
EAST	105	0.70
EL RENO	262	0.97
ENID	138	1.11
GUTHRIE	86	0.62
HEALDTON	287	1.13
MADILL	102	0.56

DISTRICT	SAIDI	SAIFI
MUSKOGEE	158	1.03
NORTH	166	0.94
PAULS VALLEY	177	0.94
POTEAU	137	0.97
SAPULPA	176	1.13
SEMINOLE	321	2.14
SHAWNEE	194	1.14
SOUTH	148	0.89
SOUTH CENTRAL	114	0.56
SULPHUR	271	1.85
WEST	107	0.74
WEWOKA	288	1.72
WOODWARD	77	0.77

2.2. MAIFI

MAIFI, Momentary Average Interruption Frequency Index, is a measure of the average frequency of momentary interruptions (less than 5 minutes). Typically, these interruptions are limited to a few seconds due to the operation of protective equipment responding to brief events on a circuit. These blinks are unavoidable on systems designed and operated for high reliability. At the present time, OG&E does not have the processes or technology to report this measure.

2.3. MAJOR EVENTS EXCLUDED FROM INDICES

Pursuant to OAC 165:35-25-20(b)(4)

Table 3: Major Events Excluded in 2017

Date of Event	District(s) Affected	Cause of Event	Customers Affected	Date of Last Restoration	Time of Last Restoration	Time (Hours)	Longest Outage (Minutes)
01/14/2017	Woodward	Ice Storm	10,111	01/17/2017	1600	71	4260
02/28/2017	Poteau	Damaging winds, lightning and rain	2,963	03/01/2017	2100	24	1440
03/28/2017	Enid	Damaging winds, lightning and rain	4,836	03/30/2017	1800	53	3,180
04/21/2017	Bristow	Damaging winds, lightning and rain	356	04/22/2017	1500	35	2,100
04/21/2017	El Reno	Damaging winds, lightning and rain	688	04/22/2017	1000	28	1,680
04/21/2017	Guthrie	Damaging winds, lightning and rain	1,568	04/22/2017	1700	35	2,100
04/21/2017	Metro East	Damaging winds, lightning and rain	4,871	04/22/2017	1900	41	2,460
04/21/2017	Poteau	Damaging winds, lightning and rain	2,597	04/22/2017	1200	30	1,800
04/28/2017	All Districts	Damaging winds, lightning and rain	85,399	05/06/2017	0700	177	10,620
05/18/2017	Chandler	Damaging winds, lightning and rain	3,661	05/20/2017	1200	43	2,580
05/18/2017	Muskogee	Damaging winds, lightning and rain	17,317	05/21/2017	2100	74	4,440
05/18/2017	Sulphur	Damaging winds, lightning and rain	1,632	05/20/2017	1700	32	1,920
05/18/2017	Sapulpa	Damaging winds, lightning and rain	4,631	05/20/2017	1700	43	2,580
05/18/2017	Shawnee	Damaging winds, lightning and rain	3,796	05/20/2017	1800	48	2,880
05/18/2017	South	Damaging winds, lightning and rain	8,120	05/20/2017	2300	56	3,360
05/27/2017	Woodward	Damaging winds, lightning and rain	2,977	05/29/2017	2400	50	3,000
05/27/2017	Seminole	Damaging winds, lightning and rain	1,483	05/28/2017	2200	26	1,560
06/17/2017	Muskogee	Damaging winds, lightning and rain	9,659	06/19/2017	2100	60	3,600
06/30/2017	Chandler	Damaging winds, lightning and rain	2,473	07/05/2017	1600	42	2,520
06/30/2017	Madill	Damaging winds, lightning and rain	684	07/02/2017	1000	35	2,100
06/30/2017	Ada	Damaging winds, lightning and rain	3,197	07/03/2017	2000	28	1,680
06/30/2017	Durant 1 of 2	Damaging winds, lightning and rain	3,002	07/02/2017	1000	36	2,160
06/30/2017	Durant 2 of 2	Damaging winds, lightning and rain		07/04/2017	2400	50	3,000
06/30/2017	Alva	Damaging winds, lightning and rain	1,334	06/30/2017	2300	23	1,380
06/30/2017	Woodward	Damaging winds, lightning and rain	1,147	07/04/2017	1600	23	1,380

Date of Event	District(s) Affected	Cause of Event	Customers Affected	Date of Last Restoration	Time of Last Restoration	Time (Hours)	Longest Outage (Minutes)
10/21/2017	Seminole	Damaging winds, lightning and rain	1,135	10/23/2017	0100	27	1,620

2.4. PERFORMANCE LEVELS

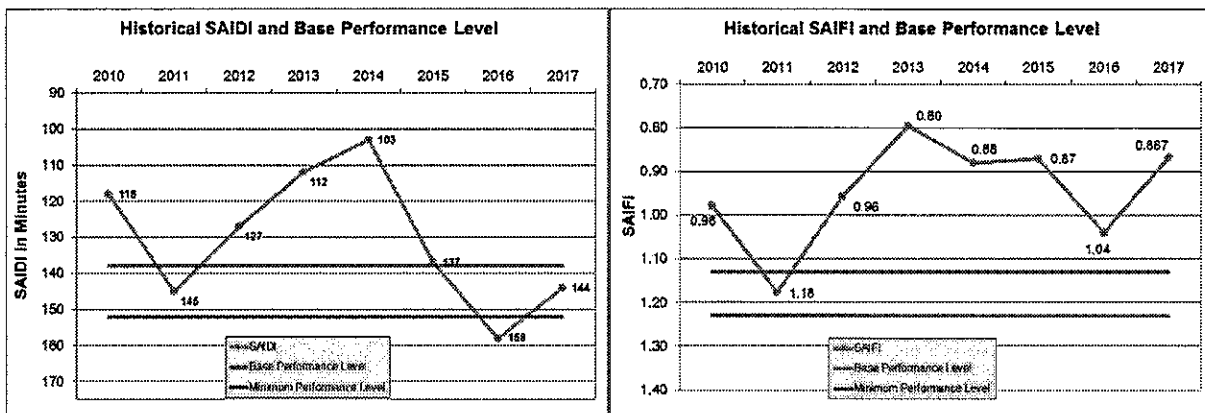
Pursuant to OAC 165:35-25-18

The Oklahoma Corporation Commission requests a recalculation of base and minimum reliability performance levels once every five years. The last change, according to OAC rules, occurred in 2015 to govern the reliability reports of 2015 through 2019. At OG&E, the base performance level was recalculated in 2015 using the mean and standard deviation of the historical performance for the past thirteen years, beginning in 2002. Table 4 compares the 2017 reliability figures to these performance levels. Furthermore, Figures 2 and 3 show historical reliability performances since these levels were set.

Table 4: Performance Level Comparison of 2017 Indices

Recalculated for 2015	SAIDI	SAIFI
2017 Performance	144	0.867
Base Performance Level	138	1.13
Minimum Performance Level	152	1.23

Figure 2: Historical SAIDI and SAIFI and Base Performance Levels



3. RELIABILITY PROGRAM

The reliability program at OG&E, as outlined in OAC 165:35-25, consists of two major efforts: a vegetation management program, which maintains distribution line clearances to prevent contact with lines, and an annual circuit reliability program, in which the worst five percent of circuits are identified and improved based upon the recommendations of analysts, inspectors and engineers.

3.1 VEGETATION MANAGEMENT PROGRAM

Pursuant to OAC 165:35-25-15(b)&(c)&(d), and OAC 165:35-25-20(b)(1)

Vegetation Management plays a key role in the protection and reliability of power systems. This section constitutes the OG&E vegetation management spending from 2017, and the plan for 2018.

Table 5: Vegetation Management Spending in 2017

Distribution Vegetation Costs	2017 Actual
Distribution Line	\$26.4 M
OG&E Distribution Resources*	\$1.5 M
Total	\$27.9 M

*internal labor, vehicles, etc.

3.1.1 ACTIVITIES

Distribution vegetation management activities are performed in four primary ways:

- Cycle clearing
- Non-cycle clearing
- Clearing for new construction or storms

The vegetation management guidelines outline procedures used in performance of these activities. Guidelines include vegetation clearances, approved herbicide application methods, and the notification process.

1 *3.1.2 CALENDAR OF ACTIVITIES*

2 Progress achieved during 2017 can be found in "Appendix C: Vegetation Management - 2017
3 Summary of Activity." The schedule for 2018 can be found in "Appendix D: Vegetation
4 Management - 2018 Detailed Plan."

5 *3.1.3 IMPLEMENTATION PLAN*

6 OG&E continues to leverage various contract methods to effectively implement the plan and control
7 costs. Lump sum, hourly, and unit price contracting encourage competitive pricing and
8 performance.

9 A percentage of expenditures are used to address vegetation work off-cycle. Addressing dead trees,
10 cycle-busters (trees or vegetation that outgrow the clearance obtained), and other unscheduled
11 work is often necessary to manage customer satisfaction or enhance the reliability of the system.
12 This often includes responsive work necessary to make trees safe for private arborists and
13 government entities.

14 *3.1.4 CRITERIA TO ASSESS RESULTS*

15 The OG&E Vegetation Management Team audits contractor work at the crew level and at the circuit
16 level. Corrective orders are issued to the contractors if deficiencies are noted. In order to gauge the
17 effectiveness of the Vegetation Management program, OG&E also monitors many reliability
18 indicators or metrics. Adjustments to the schedule may be made to address any reliability issues.

19 *3.1.5 COMPANY REPRESENTATIVE KNOWLEDGEABLE ABOUT THE PLAN*

Jarod Cassada
Supervisor, Vegetation Management

PO Box 321 M/C 130
Oklahoma City, OK 73101

1 **3.2 CIRCUIT RELIABILITY PROGRAM**

2 *Pursuant to OAC165:35-25-19 and OAC 165:35-25-20(b)(5)*

3 The circuit reliability program is executed annually to improve the reliability of the previous year's
4 worst performing circuits. Five percent of operating circuits are selected using a combined score of
5 both SAIDI and SAIFI. Analysis is performed on each circuit to identify the cause of the poor
6 performance and determine if action is required. Circuits are then inspected and specific work is
7 identified. This work may include tree trimming, protection coordination, and equipment
8 replacement.

1 *3.2.1 WORST PERFORMING CIRCUITS IN 2017*

2 Table 6: Worst Performing Circuits in 2017

RANK	DISTRICT	SUBSTATION	CIRCUIT	CUSTOMERS	SAIDI	SAIFI
1	EAST	8687 T #5	868739	1	2,305	10.00
2	GUTHRIE	8814 PINE STREET	881444	144	2,314	8.42
3	EL RENO	8921 JENSEN RD	892169	415	1,948	8.49
4	CHANDLER	7118 KEY WEST	711846	460	2,304	6.29
5	EAST	8697 T #3	869701	3	1,650	6.67
6	EL RENO	8906 SOUTHARD	890649	267	2,066	4.97
7	SEMINOLE	7321 LETHA	732122	817	1,046	8.66
8	SHAWNEE	7410 MAUD TAP	741021	123	1,182	6.78
9	SULPHUR	5707 MILL CREEK	570723	190	1,908	4.11
10	ENID	4225 FOUR CORNERS	422521	38	908	5.42
11	SOUTH	5607 ROSEDALE TAP	560724	336	1,282	3.65
12	MUSKOGEE	3326 JAMESVILLE	332641	142	1,014	4.07
13	SOUTH	8621 DRAPER LAKE	862171	2900	781	4.27
14	ENID	8908 ROMAN NOSE	890847	276	1,181	3.96
15	SOUTH	5607 ROSEDALE TAP	560722	641	679	5.09
16	SHAWNEE	7417 TRIBBEY	741721	234	702	4.54
17	SEMINOLE	7321 LETHA	732121	435	683	4.90
18	DRUMRIGHT	7606 CUSHING TAP	760649	93	707	3.14
19	ENID	4123 KREMLIN TAP	412321	409	500	5.21
20	SULPHUR	5708 DAVIS	570822	954	517	4.84
21	ENID	4220 CLYDE	422023	387	537	4.15
22	SHAWNEE	7410 MAUD TAP	741022	253	891	2.65
23	ENID	8908 ROMAN NOSE	890846	147	740	2.92
24	NORTH	8248 SW 5TH ST	824862	98	527	4.08
25	NORTH	8361 WESTERN AVE	836128	952	613	3.16
26	SHAWNEE	7430 INGLEWOOD	743022	2132	537	3.48
27	NORTH	8248 SW 5TH ST	824864	1924	462	4.17
28	DRUMRIGHT	7620 ANTIOCH	762049	185	1,283	2.26
29	SHAWNEE	7410 MAUD TAP	741023	633	489	4.01
30	SEMINOLE	7307 LITTLE RIVER	730722	423	595	2.72
31	MUSKOGEE	3137 AGENCY	313769	129	539	3.09
32	EAST	8687 T #5	868701	1	551	3.00
33	HEALDTON	5321 WILDHORSE	532122	33	699	2.45
34	POTEAU	3508 SPIRO COAL	350822	3	814	2.33
35	ENID	4239 OTOE	423922	141	523	3.11
36	SAPULPA	3214 LONE STAR	321422	1250	429	3.61
37	NORTH	8352 QUAIL CREEK	835229	1302	410	4.04
38	SOUTH CENTRAL	8115 SW 22ND ST	811524	2050	486	3.00
39	NORTH	8535 OU MED CENTER	853572	483	493	2.97
40	HEALDTON	5321 WILDHORSE	532121	118	583	2.43
41	MUSKOGEE	3313 ILLINOIS RIVER	331321	869	457	3.03
42	SHAWNEE	7412 PEARSON	741221	681	411	3.45
43	HEALDTON	5306 COUNTY LINE	530621	331	372	4.04
44	DRUMRIGHT	7605 DRUMRIGHT	760541	306	773	2.15
45	DRUMRIGHT	7632 OAK GROVE	763221	1032	508	2.45
46	PAULS VALLEY	5611 MAYSVILLE	561121	498	583	2.25
47	SEMINOLE	7208 CYPRESS	720822	1413	433	2.68
48	SOUTH CENTRAL	8151 PENNSYLVANIA	815134	2091	794	2.07
49	NORTH	8352 QUAIL CREEK	835231	621	293	5.20
50	CHANDLER	7118 KEY WEST	711847	726	353	3.24

1 **3.2.2 RELIABILITY PROGRAM RESULTS (2016 WORST PERFORMING CIRCUITS)**

2 **Table 7: Reliability Program Results for 2016 WPCs**

RANK	DISTRICT	SUBSTATION	CIRCUIT	CURRENT STATUS
1	ENID	4210 MEDFORD	421021	Designed and Constructed
2	ENID	8908 ROMAN NOSE	890847	Designed and Constructed
3	ENID	4240 DEER CREEK	424048	Designed and Constructed
4	DRUMRIGHT	7605 DRUMRIGHT	760541	Designed and Constructed
5	SULPHUR	5712 JOLLYVILLE	571264	Inspected and Repaired
6	ENID	8908 ROMAN NOSE	890846	Designed and Constructed
7	WEWOKA	7506 SASAKWA	750629	No Inspection Required
8	SULPHUR	5712 JOLLYVILLE	571262	Designed and Constructed
9	EL RENO	8921 JENSEN RD	892169	Under Construction
10	EAST	8522 MIDWAY	852261	Designed and Constructed
11	SULPHUR	5706 LAKE ARBUCKLE	570646	No Inspection Required
12	WEWOKA	7508 EMAHAKA	750821	Designed and Constructed
13	ENID	4240 DEER CREEK	424046	No Inspection Required
14	EL RENO	8906 SOUTHARD	890646	Designed and Constructed
15	DURANT	5504 BUTTERFIELD	550424	Designed and Constructed
16	WEWOKA	7506 SASAKWA	750622	Inspected and Repaired
17	CHANDLER	7118 KEY WEST	711846	No Inspection Required
18	SOUTH	5607 ROSEDALE TAP	560722	Designed and Constructed
19	ENID	4261 WHITE EAGLE	426121	Designed and Constructed
20	ENID	4123 KREMLIN TAP	412321	Designed and Constructed
21	EL RENO	8906 SOUTHARD	890647	Designed and Constructed
22	SEMINOLE	7312 JUMPER CREEK	731225	Designed and Constructed
23	EL RENO	8906 SOUTHARD	890649	Designed and Constructed
24	ALVA	4538 GOLTRY TAP	453822	Designed and Constructed
25	ENID	4220 CLYDE	422023	Awaiting Design
26	SEMINOLE	7312 JUMPER CREEK	731227	Inspected and Repaired
27	DRUMRIGHT	7610 PRINCEVILLE	761021	No Inspection Required
28	DRUMRIGHT	7611 MORRISON TAP	761122	Designed and Constructed
29	DRUMRIGHT	7620 ANTIOCH	762049	Awaiting Design
30	EAST	8471 NE 30TH ST	847122	Designed and Constructed
31	MUSKOGEE	3327 VIAN [NEW]	332722	No Inspection Required
32	SULPHUR	5708 DAVIS	570821	No Inspection Required
33	ENID	4109 WAUKOMIS	410921	Designed and Constructed
34	POTEAU	3509 PANAMA	350922	Inspected and Repaired
35	DURANT	5506 BODLE	550626	Inspected and Repaired
36	ENID	4210 MEDFORD	421022	Inspected and Repaired
37	ENID	4461 TURKEY CREEK	446121	Designed and Constructed
38	ENID	4239 OTOE	423922	No Inspection Required
39	SOUTH	8709 LITTLE RIVER LAKE	870921	Inspected and Repaired
40	SHAWNEE	7411 DALE	741129	Inspected and Repaired
41	SAPULPA	3209 BIXBY	320929	Designed and Constructed
42	MUSKOGEE	3326 JAMESVILLE	332641	Awaiting Design
43	EL RENO	8921 JENSEN RD	892122	Designed and Constructed
44	CHANDLER	7104 BELLCOW	710431	Designed and Constructed
45	POTEAU	3608 MULDROW	360821	Inspected and Repaired

RANK	DISTRICT	SUBSTATION	CIRCUIT	CURRENT STATUS
46	NORTH	8523 PARK PLACE ATO	852301	No Inspection Required
47	PAULS VALLEY	5611 MAYSVILLE	561122	Designed and Constructed
48	NORTH	8312 BELLE ISLE STA	831226	Designed and Constructed
49	SHAWNEE	7417 TRIBBEY	741721	Awaiting Design
50	WEST	8359 YUKON	835923	Under Construction

1

APPENDIX A: RELIABILITY INDICES DEFINITIONS

The following definitions and terms are from the Institute of Electrical and Electronics Engineers (IEEE) Guide for Electric Power Distribution Reliability Indices, IEEE Std. 1366-1998. The guide contains other definitions and terms as well as the methodology to calculate reliability indices in a manner that promotes uniformity and consistency among utilities.

SAIFI-System Average Interruption Frequency Index

This index is an indication of how often the average customer experiences a sustained interruption over a defined period of time. Mathematically, this is obtained by dividing the total number of customers interrupted by the total number of customers served.

$$SAIFI = \frac{\sum \text{Total Number of Customers Interrupted}}{\text{Total Number of Customers Served}}$$

SAIDI-System Average Interruption Duration Index

This index is an indication of the total duration of sustained interruptions for the average customer during a defined period of time. It is commonly measured in minutes. Mathematically, this is obtained by dividing the total of all customer interruption durations by the total number of customers served. Customer interruption durations are denoted as "Customer-Minutes Interrupted" or CMI.

$$SAIDI = \frac{\sum \text{Customer Interruption Durations}}{\text{Total Number of Customers Served}}$$

MAIFI-Momentary Average Interruption Frequency Index

MAIFI indicates the average frequency of momentary interruptions.

$$MAIFI = \frac{\sum \text{Total Number of Customer Momentary Interruptions}}{\text{Total Number of Customers Served}}$$

APPENDIX B: TABLE OF 2017 RELIABILITY INDICES

Table 8: Oklahoma Reliability Indices 2017

Table of 2017 Oklahoma Reliability Indices								
REGION		DISTRICT	Interrupted Customers	Customers Served	CMI	SAIDI	SAIFI	CAIDI
Reference for Calculations			A	B	C	C/B	A/B	C/A
Metro Region	North	GUTHRIE	11,953	19,153	1,650,047	86	0.62	138
	North	NORTH	132,472	140,285	23,330,321	166	0.94	176
	North Total		144,425	159,438	24,980,368	157	0.91	173
	South	SOUTH	51,302	57,848	8,577,128	148	0.89	167
	South	SOUTH CENTRAL	49,943	89,913	10,279,114	114	0.56	206
	South Total		101,245	147,761	18,856,242	128	0.69	186
	East	EAST	54,332	77,217	8,126,950	105	0.70	150
	East Total		54,332	77,217	8,126,950	105	0.70	150
	West	EL RENO	11,182	11,587	3,033,156	262	0.97	271
	West	WEST	80,640	108,795	11,663,817	107	0.74	145
	West Total		91,822	120,381	14,696,973	122	0.76	160
	Shawnee	SEMINOLE	24,651	11,537	3,708,577	321	2.14	150
	Shawnee	WEWOKA	5,710	3,320	956,491	288	1.72	168
	Shawnee	CHANDLER	9,434	8,277	2,129,137	257	1.14	226
	Shawnee	SHAWNEE	24,602	21,633	4,201,613	194	1.14	171
	Shawnee Total		64,397	44,767	10,995,818	246	1.44	171
Metro Region	Totals		456,221	549,564	77,656,351	141	0.83	170
South Region	Ardmore	ARDMORE	17,804	27,284	3,295,749	121	0.65	185
	Ardmore	DURANT	15,488	14,679	1,625,090	111	1.06	105
	Ardmore	HEALDTON	6,293	5,578	1,601,576	287	1.13	255
	Ardmore	MADILL	2,195	3,927	400,555	102	0.56	182
	Ardmore	SULPHUR	12,433	6,704	1,818,537	271	1.85	146
	Ardmore	ADA	7,315	11,405	1,828,236	160	0.64	250
	Ardmore	PAULS VALLEY	5,806	6,154	1,091,173	177	0.94	188
South Region	Totals		67,334	75,732	11,660,916	154	0.89	173
Northwest Region	Enid	ALVA	3,460	6,860	479,326	70	0.50	139
	Enid	ENID	40,469	36,508	5,043,494	138	1.11	125
	Enid	WOODWARD	8,105	10,476	803,201	77	0.77	99
Northwest Region	Totals		52,034	53,844	6,326,021	117	0.97	122
Northeast Region	Sapulpa	BRISTOW	5,126	3,732	713,172	191	1.37	139
	Sapulpa	DRUMRIGHT	6,751	7,585	2,246,124	296	0.89	333
	Sapulpa	SAPULPA	31,952	28,348	5,001,435	176	1.13	157
	Sapulpa Total		43,829	39,665	7,960,731	201	1.10	182
	Muskogee	MUSKOGEE	34,054	32,939	5,196,696	158	1.03	153
	Muskogee Total		34,054	32,939	5,196,696	158	1.03	153
Northeast Region	Totals		77,883	72,604	13,157,427	181	1.07	169
Arkansas Region	Fort Smith	POTEAU	13,194	13,567	1,863,713	137	0.97	141
Arkansas Region (Oklahoma Customers)	Totals		13,194	13,567	1,863,713	137	0.97	141
Customer Variance*				3,744				
Oklahoma Totals			666,666	765,311	110,664,428	144.60	0.871	166
Oklahoma "Reported" Indices			666,666	769,056	110,664,428	143.90	0.867	166

*Variations due to differences in timing, accounting and management systems

APPENDIX C: VEGETATION MANAGEMENT - 2017 SUMMARY OF ACTIVITY

Pursuant to OAC 165:35-25-20(b)(1)

Table 9: Summary of Activity, Vegetation Management 2017

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	COMPLETION DATE	MILES
MUSKOGEE	310922	HONOR HEIGHTS 22	10/10/2017	0.99
MUSKOGEE	311021	RIVERSIDE 21	3/20/2017	10.26
MUSKOGEE	311129	FIVE TRIBES 29	10/24/2017	29.79
MUSKOGEE	311421	TENNYSON 21	10/24/2017	13.99
MUSKOGEE	312823	HANCOCK 23	10/24/2017	17.60
MUSKOGEE	312824	HANCOCK 24	10/10/2017	21.95
MUSKOGEE	312869	HANCOCK 69	10/10/2017	5.79
MUSKOGEE	313629	EUCLID 29	10/10/2017	11.56
SAPULPA	320521	SAPULPA 21	10/24/2017	20.23
SAPULPA	320531	SAPULPA 31	7/7/2017	0.97
SAPULPA	320822	TIBBENS ROAD 22	10/17/2017	42.90
SAPULPA	320824	TIBBENS ROAD 24	10/6/2017	26.56
SAPULPA	321024	HICKORY HILL 24	11/30/2017	23.38
SAPULPA	321323	BOWDEN 23	10/12/2017	15.25
SAPULPA	321422	LONE STAR 22	10/9/2017	40.47
SAPULPA	321629	BEELINE 29	10/24/2017	35.49
SAPULPA	321824	BEGGS 24	10/12/2017	60.35
SAPULPA	322024	KELLYVILLE 24	10/24/2017	118.37
MUSKOGEE	331221	CHECOTAH 21	2/22/2017	33.27
MUSKOGEE	331222	CHECOTAH 22	10/10/2017	78.74
MUSKOGEE	331421	PORUM 21	10/10/2017	65.84
MUSKOGEE	331621	WARNER 21	2/22/2017	24.91
MUSKOGEE	332124	ROSS LAKE 24	10/12/2017	22.82
MUSKOGEE	332129	ROSS LAKE 29	10/25/2017	26.53
MUSKOGEE	332542	WELLS 42	11/30/2017	32.07
MUSKOGEE	332549	WELLS 49	1/24/2017	82.73
MUSKOGEE	332641	JAMESVILLE 41	6/23/2017	29.02
POTEAU	350522	POTEAU 22	9/14/2017	51.79
POTEAU	350622	CAVANAL MTN 22	4/5/2017	36.01
POTEAU	350922	PANAMA 22	9/14/2017	15.57
POTEAU	350942	PANAMA 42	9/14/2017	43.48
POTEAU	351421	HEAVENER 21	9/14/2017	14.71
POTEAU	360721	ROLAND ROAD 21	9/14/2017	27.86
POTEAU	360821	MULDROW 21	10/23/2017	31.70
ENID	410624	HEMLOCK 24	9/11/2017	22.39
ENID	410723	CLEVELAND AVE 23	10/2/2017	11.42
ENID	410921	WUKOMIS 21	9/1/2017	32.71
ENID	411924	GLENWOOD 24	2/28/2017	68.93
ENID	413524	SO 4TH ST 24	11/10/2017	22.65
ENID	415324	IMO 24	11/18/2017	83.78
ENID	415721	NE ENID 21	2/27/2017	54.65
ENID	415723	NE ENID 23	12/7/2017	81.63
ENID	421941	BUNCH CREEK 41	10/2/2017	122.75
ENID	426121	WHITE EAGLE 21	10/2/2017	36.27
ENID	435341	OTTER 41	2/20/2017	140.49
ENID	435342	OTTER 42	2/28/2017	49.90
ENID	441422	HENNESSEY 22	7/1/2017	80.80

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	COMPLETION DATE	MILES
ENID	446121	TURKEY CREEK 21	10/2/2017	44.38
ENID	451821	MENO TAP 21	10/25/2017	100.68
WOODWARD	460621	CEDAR AVE 21	12/7/2017	12.11
WOODWARD	460622	CEDAR AVE 22	12/7/2017	33.34
WOODWARD	460624	CEDAR AVE 24	12/1/2017	12.32
WOODWARD	460629	CEDAR AVE 29	12/7/2017	9.21
WOODWARD	460631	CEDAR AVE 31	12/7/2017	19.54
WOODWARD	461143	DEWEY 43	9/1/2017	33.51
ALVA	470722	KNOBHILL 22	10/2/2017	123.64
HEALDTON	531121	RATLIFF 21	2/20/2017	19.10
MADILL	541022	GLASSES 22	4/12/2017	22.27
DURANT	550522	DURANT 22	2/6/2017	41.77
DURANT	551222	COLBERT 22	4/14/2017	44.01
PAULS VALLEY	560821	SHELL ELMORE CITY TAP	1/4/2017	34.78
PAULS VALLEY	562021	PRAIRIE POINT 21	5/11/2017	34.85
PAULS VALLEY	562022	PRAIRIE POINT 22	10/16/2017	15.02
ADA	580621	VALLEY VIEW 21	2/15/2017	1.42
ADA	580623	VALLEY VIEW 23	10/16/2017	11.85
ADA	580721	AHLOSO 21	2/15/2017	9.66
PAULS VALLEY	580922	VANOSS 22	10/17/2017	52.81
ADA	581621	PARK LANE 21	10/2/2017	23.88
ADA	581623	PARK LANE 23	10/10/2017	22.32
ARDMORE	590721	RUSSETT 21	10/26/2017	46.05
CHANDLER	711742	JACKTOWN 42	6/30/2017	51.18
CHANDLER	711846	KEY WEST 46	10/17/2017	69.11
SEMINOLE	730622	FIXICO 22	5/1/2017	17.45
SEMINOLE	730624	FIXICO 24	5/18/2017	24.13
SEMINOLE	730631	FIXICO 31	8/10/2017	59.37
SEMINOLE	730647	FIXICO 47	9/28/2017	19.62
SEMINOLE	731227	JUMPER CREEK 27	9/28/2017	56.15
SEMINOLE	731921	SEMINOLE PUMP 21	9/28/2017	2.93
SEMINOLE	732041	KOLACHE 41	12/1/2017	29.69
SEMINOLE	732121	LETHA 21	9/28/2017	32.20
SEMINOLE	732122	LETHA 22	1/31/2017	56.76
SHAWNEE	741221	PEARSON 21	7/11/2017	74.66
SHAWNEE	741721	TRIBBEY 21	1/10/2017	43.52
SHAWNEE	743022	INGLEWOOD 22	1/19/2017	22.80
SHAWNEE	743023	INGLEWOOD 23	1/19/2017	75.49
SHAWNEE	743222	ST GREGORY 22	1/19/2017	10.71
SHAWNEE	743231	ST GREGORY 31	7/14/2017	11.69
SHAWNEE	743524	MISSION HILL 24	2/15/2017	43.70
SEMINOLE	750821	EMAHAKA 21	9/20/2017	50.02
WEWOKA	751247	CROMWELL 47	6/23/2017	32.60
DRUMRIGHT	760541	DRUMRIGHT 41	10/10/2017	62.56
DRUMRIGHT	761022	PRINCEVILLE 22	10/10/2017	4.16
DRUMRIGHT	762049	ANTIOCH 49	8/15/2017	56.23
BRISTOW	770621	BRISTOW 21	10/9/2017	78.06
BRISTOW	770626	BRISTOW 26	10/9/2017	7.94
CENTRAL	811521	SW 22ND ST 21	8/5/2017	14.74
CENTRAL	811522	SW 22ND ST 22	10/3/2017	15.48
CENTRAL	811523	SW 22ND ST 23	4/15/2017	14.24
CENTRAL	812922	SW 64TH ST 22	2/28/2017	11.41
CENTRAL	814122	SAGE 22	1/21/2017	8.58
CENTRAL	815121	PENNSYLVANIA 21	8/5/2017	5.53

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	COMPLETION DATE	MILES
CENTRAL	815123	PENNSYLVANIA 23	2/28/2017	8.80
Metro West	815722	MACARTHUR 22	10/2/2017	11.79
METRO WEST	815862	SARA 62	12/1/2017	42.18
METRO WEST	815864	SARA 64	10/7/2017	48.57
South	816326	SOUTHGATE 26	8/12/2017	28.35
CENTRAL	820671	ROBINSON AVE 71	2/15/2017	2.51
METRO	822023	MAY AVE 23	2/15/2017	7.30
METRO WEST	822229	CZECH HALL 29	10/2/2017	6.11
METRO WEST	824533	COUNCIL 33	10/27/2017	9.99
CENTRAL	824864	SW 5TH ST 64	8/5/2017	30.45
METRO WEST	829722	MORGAN ROAD 22	10/2/2017	3.82
METRO WEST	829929	WESTOAKS 29	11/27/2017	16.22
METRO	830861	LONE OAK 61	12/7/2017	44.13
GUTHRIE	830864	LONE OAK 64	12/1/2017	78.28
METRO	831231	BELLE ISLE STA 31	2/15/2017	5.16
METRO WEST	831373	HAYMAKER 73	10/25/2017	42.56
METRO WEST	832162	PIEDMONT 62	10/27/2017	50.87
Metro West	832164	PIEDMONT 64	12/7/2017	78.03
METRO WEST	833527	BETHANY 27	2/22/2017	14.60
METRO	833631	TENNESSEE 31	2/15/2017	8.90
METRO	833722	EIGHTY FOURTH ST 22	2/15/2017	11.28
METRO	833723	EIGHTY FOURTH ST 23	2/23/2017	3.17
METRO	833724	EIGHTY FOURTH ST 24	2/23/2017	4.28
METRO	833731	EIGHTY FOURTH ST 31	2/23/2017	14.10
METRO	833922	TULSA AVE 22	2/15/2017	12.90
METRO WEST	835922	YUKON 22	7/24/2017	9.70
METRO WEST	835923	YUKON 23	11/20/2017	16.82
METRO WEST	836022	WOODLAWN 22	9/29/2017	12.19
METRO WEST	836023	WOODLAWN 23	11/20/2017	12.77
METRO	836125	WESTERN AVE 25	2/15/2017	10.28
METRO EAST	841170	ACORN 70	8/12/2017	38.20
METRO EAST	841172	ACORN 72	8/19/2017	16.09
Metro East	841723	ROUND BARN 23	8/19/2017	67.22
METRO	843022	REMINGTON PARK 22	10/16/2017	16.68
METRO EAST	845821	GREEN PASTURES 21	4/15/2017	41.46
METRO EAST	845824	GREEN PASTURES 24	2/20/2017	64.30
METRO	846922	MEMORIAL 22	2/15/2017	16.10
METRO EAST	846923	MEMORIAL 23	2/15/2017	12.18
METRO	847422	STONEWALL 22	2/15/2017	10.13
METRO	847431	STONEWALL 31	2/15/2017	6.78
METRO EAST	852222	MIDWAY 22	2/20/2017	44.37
METRO EAST	852261	MIDWAY 61	4/15/2017	137.11
CENTRAL	853624	WASHINGTON PARK 24	2/20/2017	7.63
CENTRAL	862022	LIGHTNING CREEK 22	8/11/2017	15.05
METRO EAST	862624	TROSPER 24	10/25/2017	11.59
METRO EAST	865023	GLENDALE 23	2/20/2017	10.54
CENTRAL	865629	FOSTER 29	2/28/2017	14.33
NORMAN	870522	NORMAN 22	9/30/2017	4.03
NORMAN	870622	BOYD 22	12/22/2017	7.69
NORMAN	870624	BOYD 24	7/24/2017	5.51
NORMAN	870721	WILKINSON 21	12/19/2017	5.30
NORMAN	870724	WILKINSON 24	3/9/2017	10.69
NORMAN	871421	LITTLE AXE 21	10/13/2017	67.72
NORMAN	872321	INDIAN HILL 21	9/28/2017	16.03

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	COMPLETION DATE	MILES
NORMAN	872621	NOBLE 21	2/7/2017	12.48
NORMAN	872623	NOBLE 23	8/26/2017	10.30
NORMAN	872721	STUBBEMAN 21	12/31/2017	5.79
NORMAN	872829	CHERRY CREEK 29	9/28/2017	0.90
NORMAN	872831	CHERRY CREEK 31	7/13/2017	6.14
GUTHRIE	882222	WATERLOO 22	2/15/2017	32.22
GUTHRIE	882224	WATERLOO 24	2/15/2017	42.85
EL RENO	890521	EL RENO 21	2/3/2017	24.81
EL RENO	890523	EL RENO 23	10/2/2017	31.89
EL RENO	890647	SOUTHARD 47	11/20/2017	96.20
EL RENO	890649	SOUTHARD 49	2/20/2017	80.40
EL RENO	890846	ROMAN NOSE 46	11/18/2017	38.76
EL RENO	890847	ROMAN NOSE 47	10/25/2017	130.41
METRO WEST	892122	JENSEN ROAD 22	10/27/2017	10.29
EL RENO	892169	JENSEN RD 69	10/27/2017	51.98

APPENDIX D: VEGETATION MANAGEMENT - 2018 DETAILED PLAN

Pursuant to OAC 165:35-25-15

Table 10: Vegetation Management Detailed Plan 2018

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	MILES
MUSKOGEE	311421	TENNYSON 21	14.0
MUSKOGEE	311422	TENNYSON 22	24.6
MUSKOGEE	311423	TENNYSON 23	22.3
MUSKOGEE	312821	HANCOCK 21	12.7
MUSKOGEE	312822	HANCOCK 22	13.9
MUSKOGEE	312824	HANCOCK 24	21.9
MUSKOGEE	313224	MUSKOGEE PORT 24	7.8
MUSKOGEE	313624	EUCLID 24	3.5
MUSKOGEE	313629	EUCLID 29	11.6
MUSKOGEE	313631	EUCLID 31	11.9
MUSKOGEE	313769	AGENCY 69	6.7
SAPULPA	320521	SAPULPA 21	20.2
SAPULPA	320522	SAPULPA 22	1.3
SAPULPA	320523	SAPULPA 23	10.4
SAPULPA	320524	SAPULPA 24	0.9
SAPULPA	320529	SAPULPA 29	6.1
SAPULPA	320531	SAPULPA 31	1.0
SAPULPA	320821	TIBBENS ROAD 21	18.5
SAPULPA	320822	TIBBENS ROAD 22	42.9
SAPULPA	320823	TIBBENS ROAD 23	11.1
SAPULPA	320824	TIBBENS ROAD 24	26.6
SAPULPA	320929	BIXBY 29	57.4
SAPULPA	321626	BEELINE 26	27.0
SAPULPA	321628	BEELINE 28	13.2
MUSKOGEE	331321	ILLINOIS RIVER 21	29.8
MUSKOGEE	332542	WELLS 42	32.1
MUSKOGEE	332543	WELLS 43	0.2
MUSKOGEE	332549	WELLS 49	82.7
POTEAU	350521	POTEAU 21	6.4
POTEAU	350522	POTEAU 22	51.8
POTEAU	350523	POTEAU 23	4.7
POTEAU	350721	HOWE 21	9.5
POTEAU	350822	SPIRO COAL 22	3.5
POTEAU	351422	HEAVENER 22	64.5
ENID	410922	WAUKOMIS 22	3.2
ENID	410924	WAUKOMIS 24	89.3
ENID	411221	CHESTNUT 21	17.7
ENID	411222	CHESTNUT 22	16.7
ENID	413522	SO 4TH ST 22	30.0
ENID	413524	SO 4TH ST 24	22.6
ENID	421021	MEDFORD 21	12.8
ENID	425621	SINCLAIR BLACKWELL 21	1.1
ALVA	451922	CLEO 22	23.0
ALVA	452221	ALINE 21	6.7
ALVA	452821	SALINE 21	28.3
ALVA	452823	SALINE 23	19.2
ALVA	470521	ALVA 21	30.2
ALVA	470522	ALVA 22	31.8

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	MILES
ALVA	470523	ALVA 23	93.8
ALVA	470721	KNOBHILL 21	41.7
ALVA	470722	KNOBHILL 22	123.6
ARDMORE	510528	ARDMORE 28	23.8
ARDMORE	510530	ARDMORE 30	7.5
ARDMORE	510621	HARRIS ST 21	1.2
ARDMORE	510623	HARRIS ST 23	9.0
ARDMORE	510721	TOWER HEIGHTS 21	7.4
ARDMORE	510722	TOWER HEIGHTS 22	7.6
ARDMORE	510723	TOWER HEIGHTS 23	19.1
ARDMORE	510724	TOWER HEIGHTS 24	17.6
ARDMORE	510929	ARDMORE WEST 29	11.3
ARDMORE	510931	ARDMORE WEST 31	41.3
ARDMORE	512422	BERWYN 22	35.9
ARDMORE	512423	BERWYN 23	104.6
ARDMORE	512523	LONE GROVE 23	46.5
ARDMORE	512524	LONE GROVE 24	44.7
HEALDTON	531922	FOX 22	27.4
HEALDTON	532121	WILDHORSE 21	18.1
HEALDTON	532122	WILDHORSE 22	14.2
MADILL	540921	LITTLE CITY 21	51.9
MADILL	540922	LITTLE CITY 22	4.8
DURANT	550422	BUTTERFIELD 22	40.0
DURANT	550424	BUTTERFIELD 24	8.6
DURANT	550431	BUTTERFIELD 31	2.7
DURANT	550622	BODLE 22	7.6
DURANT	550623	BODLE 23	42.6
DURANT	550624	BODLE 24	10.5
DURANT	550661	BODLE 61	33.1
PAULS	560721	ROSEDALE TAP 21	0.0
PAULS	561121	MAYSVILLE 21	13.1
PAULS	561122	MAYSVILLE 22	51.3
SULPHUR	570621	LAKE ARBUCKLE 21	8.7
SULPHUR	570646	LAKE ARBUCKLE 46	41.0
SULPHUR	570722	MILL CREEK 22	11.3
SULPHUR	570723	MILL CREEK 23	18.0
SULPHUR	570921	PRICES FALLS 21	14.2
ADA	580422	SOUTH ADA	18.1
ADA	580424	SOUTH ADA	28.1
ADA	580429	SOUTH ADA	16.9
ADA	580431	SOUTH ADA	9.5
PAULS	580922	VANOSS 22	52.8
MADILL	590621	TISHOMINGO 21	24.5
MADILL	590623	TISHOMINGO 23	1.5
CHANDLER	711941	WARWICK 41	96.6
WEWOKA	720821	CYPRESS 21	48.3
WEWOKA	720822	CYPRESS 22	27.0
SHAWNEE	740722	REMINGTON 22	10.3
SEMINOLE	741023	MAUD TAP 23	34.8
SHAWNEE	741221	PEARSON 21	74.7
SHAWNEE	743022	INGLEWOOD 22	22.8
SHAWNEE	743024	INGLEWOOD 24	17.8
SHAWNEE	743222	ST GREGORY 22	10.7
SHAWNEE	743231	ST GREGORY 31	11.7

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	MILES
SHAWNEE	743524	MISSION HILL 24	43.7
SEMINOLE	750521	WEWOKA 21	109.5
WEWOKA	750524	WEWOKA 24	45.8
DRUMRIGHT	760451	PAYNE 51	35.6
DRUMRIGHT	760543	DRUMRIGHT 43	4.4
DRUMRIGHT	760544	DRUMRIGHT 44	78.4
DRUMRIGHT	761422	KNIPE 22	14.3
DRUMRIGHT	761423	KNIPE 23	21.3
CENTRAL	811522	SW 22ND ST 22	15.5
CENTRAL	813221	KENTUCKY 21	15.5
CENTRAL	813222	KENTUCKY 22	12.5
CENTRAL	813224	KENTUCKY 24	11.8
CENTRAL	813321	WR AIRPORT 21	9.5
CENTRAL	813323	WR AIRPORT 23	1.8
CENTRAL	814124	SAGE 24	14.6
METRO	815061	HOBBY LOBBY 61	15.2
CENTRAL	815062	HOBBY LOBBY 62	11.7
CENTRAL	815134	PENNSYLVANIA 34	7.2
METRO	815862	SARA 62	42.2
METRO	815869	SARA 69	56.9
METRO	822021	MAY AVE 21	8.5
METRO	822123	MERIDIAN 23	10.6
METRO	822129	MERIDIAN 29	11.4
METRO	826601	MUSTANG STA 01	3.7
METRO	826629	MUSTANG STA 29	0.7
METRO	829921	WESTOAKS 21	10.1
METRO	829922	WESTOAKS 22	8.5
METRO	829923	WESTOAKS 23	8.8
METRO	829924	WESTOAKS 24	9.7
METRO	829931	WESTOAKS 31	11.1
METRO	830863	LONE OAK 63	2.5
METRO	830866	LONE OAK 66	8.9
METRO	830869	LONE OAK 69	10.8
METRO	831371	HAYMAKER 71	82.5
METRO	832169	PIEDMONT 69	48.9
METRO	832221	THIRTY EIGHTH ST 21	12.6
METRO	832321	RICHARDS 21	6.3
METRO	832322	RICHARDS 22	5.3
METRO	832323	RICHARDS 23	4.9
METRO	832324	RICHARDS 24	6.0
METRO	833626	TENNESSEE 26	8.8
METRO	833724	EIGHTY FOURTH ST 24	4.3
METRO	833729	EIGHTY FOURTH ST 29	10.2
METRO	833731	EIGHTY FOURTH ST 31	14.1
METRO	833923	TULSA AVE 23	6.7
METRO	834022	SILVER LAKE 22	2.6
METRO	834024	SILVER LAKE 24	2.8
METRO	834028	SILVER LAKE 28	3.6
METRO	834029	SILVER LAKE 29	2.9
METRO	834031	SILVER LAKE 31	5.7
METRO	834033	SILVER LAKE 33	1.9
METRO	834035	SILVER LAKE 35	4.1
METRO	834221	BRADEN PARK 21	3.3
METRO	834223	BRADEN PARK 23	4.2

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	MILES
METRO	834722	WILSHIRE 22	11.7
METRO	836021	WOODLAWN 21	14.1
METRO	836023	WOODLAWN 23	12.8
METRO	836024	WOODLAWN 24	23.4
METRO	836122	WESTERN AVE 22	5.1
METRO	836123	WESTERN AVE 23	8.0
METRO	836125	WESTERN AVE 25	10.3
METRO	836126	WESTERN AVE 26	4.7
METRO	836128	WESTERN AVE 28	8.1
METRO	836521	LAKESIDE 21	10.2
METRO	836522	LAKESIDE 22	7.8
METRO	836523	LAKESIDE 23	6.5
METRO	836524	LAKESIDE 24	8.4
METRO	838121	DIVISION AVE 21	6.5
METRO	838122	DIVISION AVE 22	3.2
METRO	838123	DIVISION AVE 23	3.7
METRO	838124	DIVISION AVE 24	3.5
METRO	838129	DIVISION AVE 29	2.2
METRO	838131	DIVISION AVE 31	9.5
GUTHRIE	841723	ROUND BARN 23	67.2
METRO	846921	MEMORIAL 21	9.5
METRO	846922	MEMORIAL 22	16.1
METRO	846924	MEMORIAL 24	4.8
METRO	846963	MEMORIAL 63	5.9
METRO EAST	847122	NE 30TH ST 22	29.9
METRO	847423	STONEWALL 23	15.1
METRO	847429	STONEWALL 29	11.2
METRO EAST	851922	NE 10TH ST 22	9.7
METRO EAST	851924	NE 10TH ST 24	17.3
METRO EAST	851926	NE 10TH ST 26	23.7
METRO EAST	851928	NE 10TH ST 28	10.6
METRO EAST	851929	NE 10TH ST 29	9.2
METRO EAST	851933	NE 10TH ST 33	7.5
METRO EAST	852231	MIDWAY 31	44.5
METRO EAST	854224	RENO 24	18.7
METRO EAST	861821	BARNES 21	17.1
METRO EAST	862171	DRAPER LAKE 71	170.5
NORMAN	862173	DRAPER LAKE 73	18.7
METRO EAST	865021	GLENDALE 21)	10.0
METRO EAST	865024	GLENDALE 24	8.6
METRO EAST	865031	GLENDALE 31	10.3
METRO EAST	868501	TINKER FIELD 4 01	0.0
METRO EAST	868522	TINKER FIELD 4 22	0.5
METRO EAST	868531	TINKER FIELD 4 31	1.5
METRO EAST	868535	TINKER FIELD 4 35	0.9
METRO EAST	868721	TINKER FIELD NO 5 21	0.2
METRO EAST	868724	TINKER FIELD NO 5 24	2.8
METRO EAST	868739	TINKER FIELD NO 5 39	1.2
METRO EAST	869701	TINKER FIELD NO 3 01	0.0
METRO EAST	869723	TINKER FIELD NO 3 23	1.8
NORMAN	870523	NORMAN 23	0.5
NORMAN	870621	BOYD 21	7.3
NORMAN	870631	BOYD 31	6.8
NORMAN	870722	WILKINSON 22	21.3

DISTRICT	CIRCUIT NUMBER	CIRCUIT NAME	MILES
NORMAN	870723	WILKINSON 23	3.7
NORMAN	870822	CEDAR LANE 22	6.4
NORMAN	870823	CEDAR LANE 23	8.7
NORMAN	871723	TURNER 23	12.2
NORMAN	871922	PLEASANT VALLEY 22	4.2
NORMAN	871924	PLEASANT VALLEY 24	10.8
NORMAN	872722	STUBBEMAN 22	8.8
NORMAN	872723	STUBBEMAN 23	5.9
NORMAN	872823	CHERRY CREEK 23	2.6
GUTHRIE	880621	COTTONWOOD CREEK 21	70.6
GUTHRIE	880622	COTTONWOOD CREEK 22	29.6
GUTHRIE	882222	WATERLOO 22	32.2
GUTHRIE	882223	WATERLOO 23	66.5
EL RENO	890522	EL RENO 22	83.8
EL RENO	890523	EL RENO 23	31.9
EL RENO	890524	EL RENO 24	12.2
METRO	891021	OKARCHE 21	38.6

Oklahoma Industrial Energy Consumers
Data Request OIEC-1
Cause No. PUD 201700496

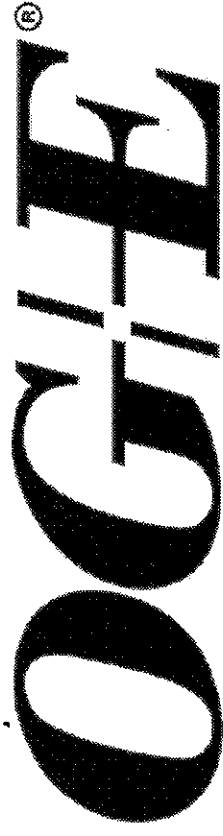
- 1-4 Please provide copies of any presentations of OG&E or OG&E's parent company, OGE Energy Corp. given to security analysts or rating agencies within the last three (3) years.**

Response*: Please see attachment OIEC 1-4_Att.

The Rating Agency Reports are considered confidential. Copies of the confidential documents will be provided to those parties that have signed the protective order.

Response provided by:	<u>Donald Rowlett</u>
Response provided on:	<u>February 2, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> 405-553-3406

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.



Barclays CEO Energy- Power Conference

September 6, 2016

Safe Harbor

Some of the matters discussed in this presentation may contain forward-looking statements that are subject to certain risks, uncertainties and assumptions. Such forward-looking statements are intended to be identified in this document by the words "anticipate", "believe", "estimate", "expect", "intend", "objective", "plan", "possible", "potential", "project" and similar expressions. Actual results may vary materially. Factors that could cause actual results to differ materially include, but are not limited to: general economic conditions, including the availability of credit, access to existing lines of credit, access to the commercial paper markets, actions of rating agencies and their impact on capital expenditures; the ability of the Company and its subsidiaries to access the capital markets and obtain financing on favorable terms as well as inflation rates and monetary fluctuations; prices and availability of electricity, coal, natural gas and natural gas liquids; the timing and extent of changes in commodity prices, particularly natural gas and natural gas liquids; the competitive effects of the available pipeline capacity in the regions Enable Midstream Partners serves, and the effects of geographic and seasonal commodity price differentials, including the effects of changes in the supply re-contracting available capacity on Enable Midstream Partners' interstate pipelines; the timing and extent of changes in the supply of natural gas, particularly supplies available for gathering by Enable Midstream Partners' gathering and processing business and transporting by Enable Midstream Partners' interstate pipelines, including the impact of natural gas and natural gas liquids prices on the level of drilling and production activities in the regions Enable Midstream Partners serves; business conditions in the energy and natural gas midstream industries including the demand for natural gas, natural gas liquids, crude oil, and midstream services; competitive factors including the extent and timing of the entry of additional competition in the markets served by the Company; unusual weather; availability and prices of raw materials for current and future construction projects; the effect of retroactive repricing of transactions in the SPP markets or adjustments in market pricing mechanisms by the SPP; Federal or state legislation and regulatory decisions and initiatives that affect cost and investment recovery, have an impact on rate structures or affect the speed and degree to which competition enters the Company's markets; environmental laws and regulations that may impact the Company's operations; changes in accounting standards, rules or guidelines; the discontinuance of accounting principles for certain types of rate-regulated activities; the cost of protecting assets against, or damage due to, terrorism or cyber-attacks and other catastrophic events; advances in technology; creditworthiness of suppliers, customers and other contractual parties; difficulty in making accurate assumptions and projections regarding future revenues and costs associated with the Company's equity investment in Enable Midstream Partners that the Company does not control; and other risk factors listed in the reports filed by the Company with the Securities and Exchange Commission including those listed in Risk Factors and Exhibit 99.01 to the Company's Form 10-K for the year ended December 31, 2015.

OGE has a clear and achievable set of financial objectives centered around investment grade credit ratings, long-term EPS and dividend growth

OGE Energy Corp

(NYSE: OGE)



OGE

ENABLE
MIDSTREAM PARTNERS

- Well positioned regulated utility with growing service territory
- Over \$1 billion of environmental compliance and plant modernization projects to be completed by January 2019
- Utility long-term growth rate of 3% – 5%
- Dividend growth rate targeted at 10% per year through 2019
- OGE holds a 26.3% limited partner interest and a 50% general partner interest of Enable Midstream Partners, LP
- Enhanced scale, with approximately \$11 billion of combined assets
- Doing exactly what we planned - provide a source of cash to OGE, become a larger stronger entity and fund itself

OG&E Facts

Regulated electric utility:
830,000 customers

Generating capacity:
6,771 megawatts, 7
power plants, 3 wind
farms

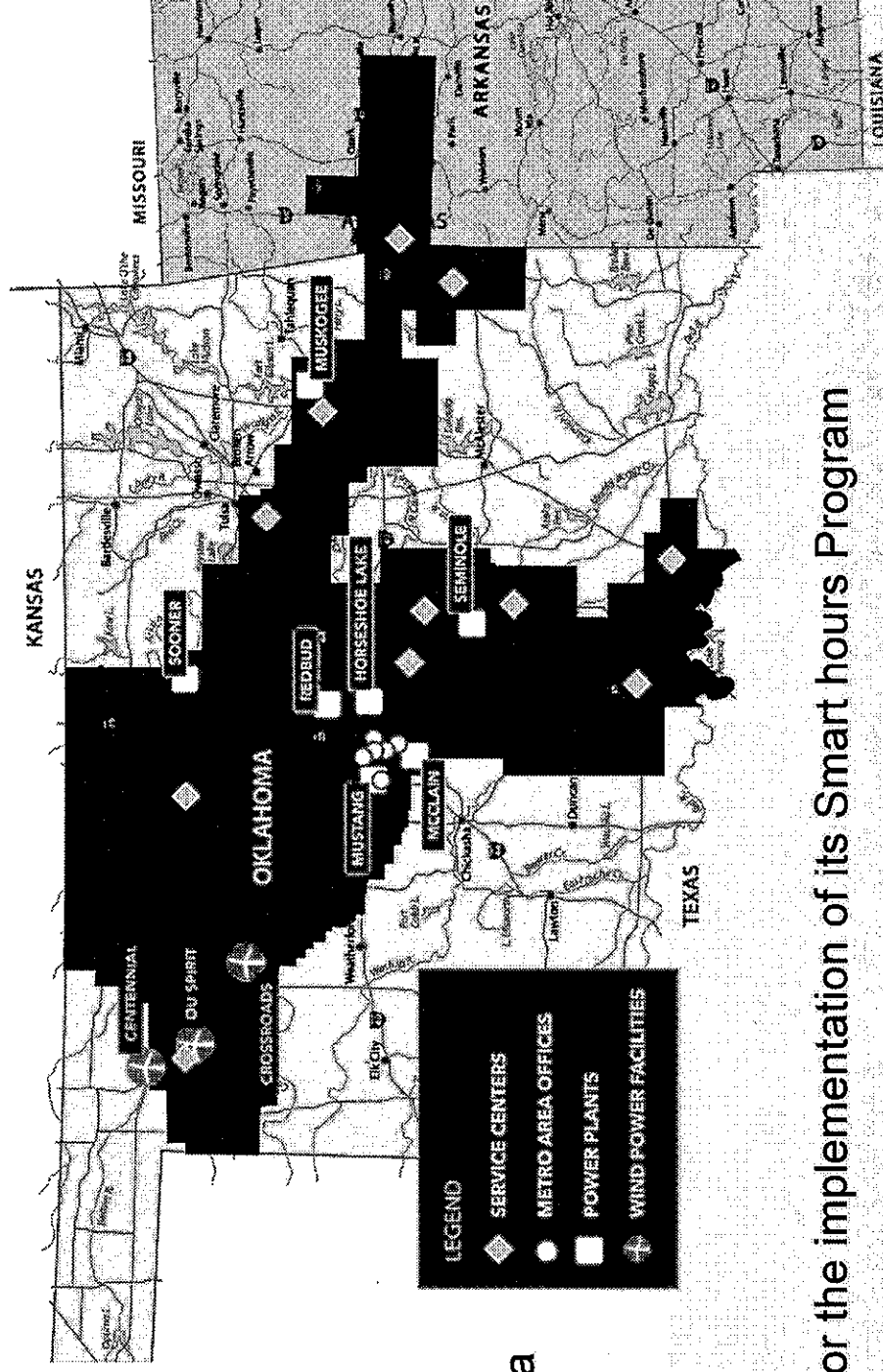
Service territory: 30,000
square miles in Oklahoma
and western Arkansas

2,586 Full-time (non-
union) Employees

2013 EEI Edison Award for the implementation of its Smart hours Program

EEI's Emergency Recovery Award 11 times since 1999

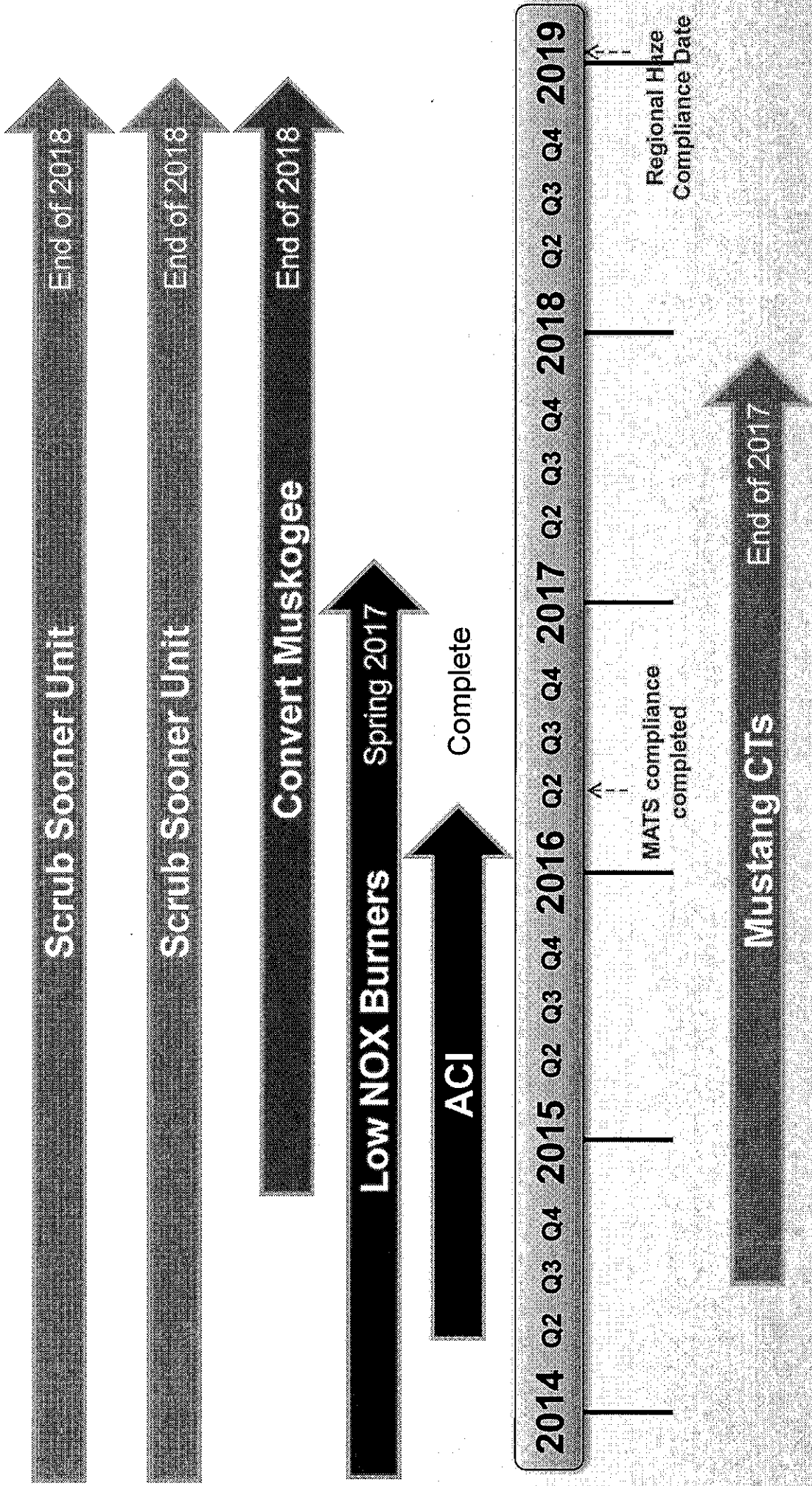
J.D. Power and Associates' 2013, 2014, & 2015 Electric Utility Residential Customer
Satisfaction Award



Focus for **OG&E**[®]

- Execute compliance strategy for environmental regulations specifically, Regional Haze
- Execute Oklahoma and Arkansas regulatory
- Continue to develop energy management solutions for OG&E's customers through the Smart Grid platform
- Investing for the future

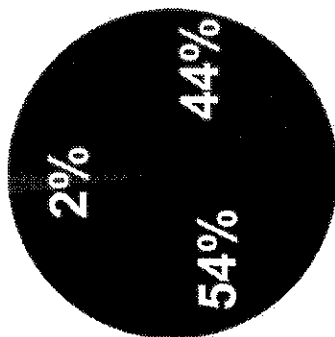
Project Completion Schedule



Regional Haze compliance date is set 55 months from US Supreme Court decision. Clock restarted 5/29/2014 + 55 months = 1/4/2019.

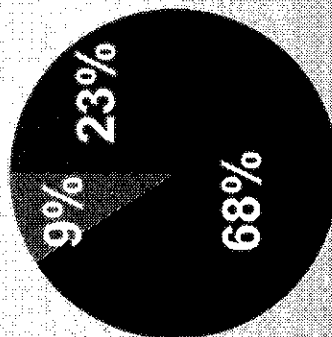
OG&E is gradually shifting generation resources and reducing emissions while maintaining fuel diversity

2007

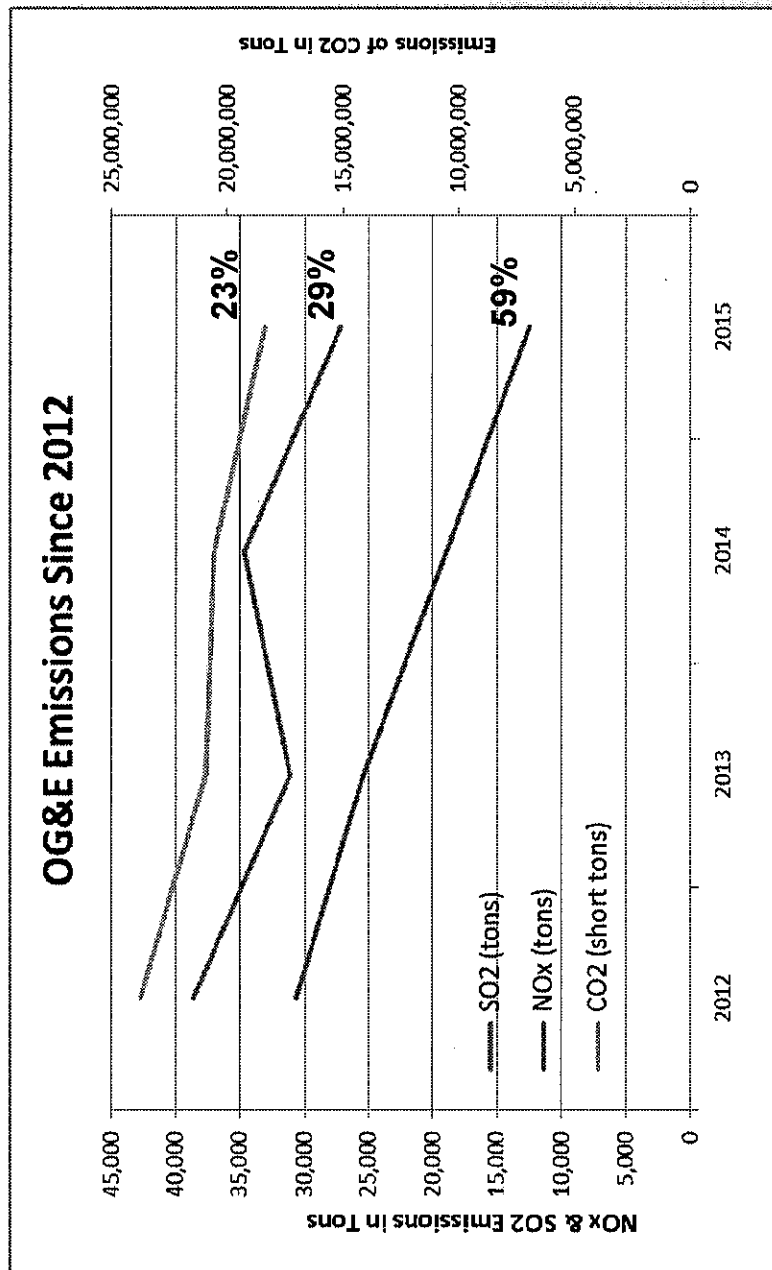


■ Coal ■ Gas ■ Wind

2020



■ Coal ■ Gas ■ Wind/Solar



Regulatory Schedule

Oklahoma

Rate Case filed December 2015

- Test year ending June 2015
- Rates were implemented July 2016

Rate Case filed November 2017

- Recovery of the Mustang CTs
- Test year ending June 2017
- Rates implemented by May 2018

Rate Case filed November 2018

- Recovery of the Scrubbers and Natural Gas Conversion
- Test year ending June 2018
- Rates implemented by May 2019

136

Arkansas

Rate Case filed August 25, 2016

- Recovery of expired wholesale contract, retail portion of transmission lines in service, and any other capital additions
- Test year ending June 2016
- Rates implemented by July 2017
- Anticipate filing application for Formula Rates Tariff
- Request Major Capital Additions Rider for the future recovery of CTs

Formula Rate Plan Filing in Mid-2018

310 Filings – Environmental

- September 2016, April 2017, December 2017, April 2019

8

The Smart Grid is Empowering Customers

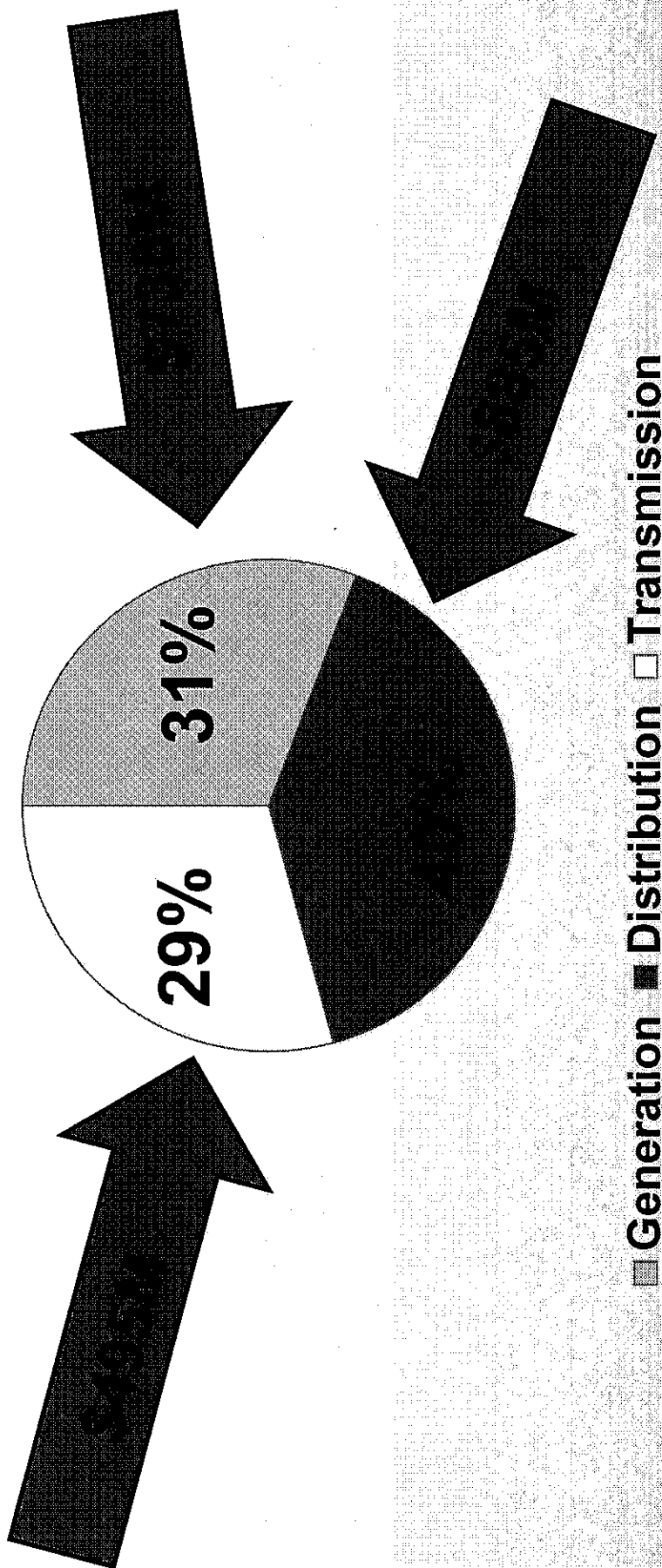
New technology has allowed utilities to integrate, interface with and intelligently interact with the wires side of the business

Benefits of this new technology include:

- Ushering is a new era of customer choice such as the OGE Smart Hours Program
- Outage response time improvement and prevention
- Allows the seamless integration of wind and solar
- Can make large scale energy storage a reality for the first time

Investing for the Future (2016-2020 Excluding Environmental Compliance)

Plant in Service 6-30-16*

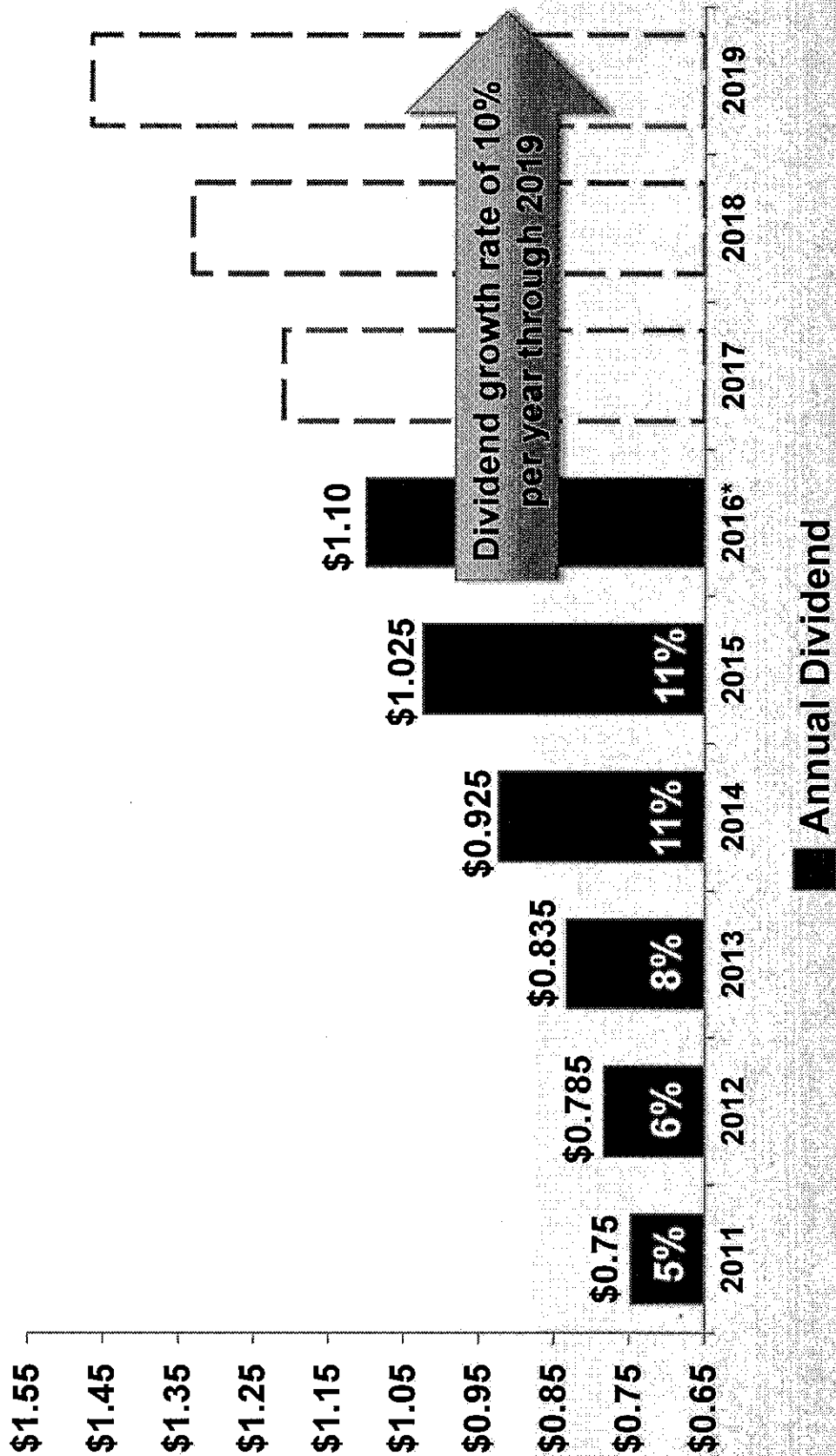


* Excludes general plant

Enable Midstream Partners

- Enable is performing well in a difficult commodity price environment
- Three strategic criteria when establishing the partnership
 - Large enough entity to stand on its own
 - Self funding – transformed from user of cash to provider of cash
 - Strong liquidity and balance sheet to weather commodity cycles
- OGE responds to the CNP's right of first offer (ROFO)
 - CNP has 30 days to respond
 - If accepted we close, if not CNP has 120 days to secure 5% premium to OGE's offer
- We are committed to our investment in Enable

Consistent dividend growth



*Quarterly dividend rate declared by the Board of Directors in September 2015

140

12

Investment Thesis

- Clear line of sight for total return
 - Strong credit ratings
 - Utility growth rate of 3-5 percent
 - Annual dividend growth rate of 10 percent through 2019
 - Strong balance sheet, liquidity and cash flow – no public equity required
- Oklahoma is still growing and poised for a pickup with an increase in commodity prices
- Arkansas regulation is improving
- Management team is focused on growing the regulated business

141

13

OGI®

Oklahoma Gas and Electric Company
J.D. Power Residential Customer Satisfaction Scores

Utility	2013	2014	2015	2016	2017	Change						
Georgia Power	666	(3)	680	(2)	705	(3)	712	(3)	761	(1)	95	(1)
Alabama Power	655	(7)	671	(4)	707	(2)	721	(2)	749	(3)	94	(2)
Dominion Virginia Power	652	(8)	661	(8)	684	(7)	706	(7)	743	(5)	91	(3)
Entergy AR	649	(9)	672	(3)	692	(6)	707	(5)	736	(7)	87	(4)
Entergy LA	660	(5)	665	(7)	682	(8)	703	(8)	745	(4)	85	(5)
Florida Power & Light	674	(2)	669	(5)	700	(4)	724	(1)	757	(2)	83	(6)
Duke Energy Progress	640	(10)	637	(11)	655	(11)	680	(10)	722	(9)	82	(7)
Duke Energy Florida	620	(13)	610	(13)	622	(13)	654	(13)	701	(13)	81	(8)
CPS Energy	661	(4)	666	(6)	700	(5)	707	(6)	732	(8)	71	(9)
Tampa Electric	631	(12)	635	(12)	654	(12)	666	(12)	702	(12)	71	(10)
South Carolina Electric & Gas	640	(11)	638	(10)	668	(9)	688	(9)	707	(11)	67	(11)
Duke Energy Carolinas	656	(6)	641	(9)	663	(10)	669	(11)	721	(10)	65	(12)
OG&E	683	(1)	696	(1)	710	(1)	711	(4)	737	(6)	54	(13)
Peer Group	657		658		682		700		738		81	
Maximum	683		696		710		724		761			
Minimum	620		610		622		654		701			

Source: Company Response to DR AG-OGE-7-8.

Oklahoma Gas and Electric Company
J.D. Power Business Customer Satisfaction Scores

Utility	2014	2015	2016	2017	Change					
Alabama Power	698	(2)	729	(2)	746	(2)	819	(1)	121	(1)
Florida Power & Light	671	(6)	700	(5)	743	(3)	789	(3)	118	(2)
Duke Energy Progress	664	(10)	672	(10)	703	(10)	780	(5)	116	(3)
Duke Energy Florida	655	(11)	667	(11)	690	(11)	771	(6)	116	(4)
Dominion Virginia Power	680	(5)	691	(7)	708	(8)	784	(4)	104	(5)
Duke Energy Carolinas	666	(8)	678	(9)	728	(4)	769	(8)	103	(6)
Entergy AR	665	(9)	706	(4)	752	(1)	763	(9)	98	(7)
Entergy LA	668	(7)	696	(6)	706	(9)	759	(10)	91	(8)
Georgia Power	713	(1)	731	(1)	718	(5)	801	(2)	88	(9)
South Carolina Electric & Gas	683	(4)	687	(8)	709	(6)	771	(7)	88	(10)
OG&E	692	(3)	723	(3)	709	(7)	759	(11)	67	(11)
Peer Group	678		698		723		783		105	
Maximum	713		731		752		801			
Minimum	655		667		690		759			

Source: Company Response to DR AG-OGE-7-8.

Oklahoma Gas and Electric Company
Retirement Dates of Units Similar To Mustang Units 1 and 2

Cause No. PUD 201700496
Exhibit TFB-10
Page 1 of 3

Retirement Date	Number	Capacity (MW)
Before 2000	2	194
2000-2009	9	547
2010-2016	31	1965
2017	0	0
2018	1	45
2019	3	201
2020	1	90
2021	1	65
2022	1	46
2023	0	0
2024	1	93
Not Announced	22	1288

Oklahoma Gas and Electric Company
Retirement Dates of Units Similar To Mustang Units 3 and 4

Cause No. PUD 201700496
Exhibit TFB-10
Page 2 of 3

Retirement Date	Number	Capacity (MW)
Before 2000	0	0
2000-2009	0	0
2010-2016	12	2043
2017	2	372
2018	0	0
2019	0	0
2020	0	0
2021	0	0
2022	0	0
2023	0	0
2024	0	0
Not Announced	3	355

Oklahoma Gas and Electric Company Comparison of Bayonne and Mustang Plants

Cause No. PUD 201700496
Exhibit TFB-10
Page 3 of 3

Bayonne

	Fuel Used (BCF)	Generation (MWH)	Heat Content (MMBtu)	Heat Rate (Btu/kwh)	Capacity Factor
2013	8,001	829,385	8,250,432	9,948	20.0%
2014	12,149	1,301,635	12,703,741	9,760	31.4%
2015	9,483	1,016,514	9,829,486	9,670	24.5%
2016	10,574	1,115,660	10,910,987	9,780	26.8%
4-year Total	40,207	4,263,194	41,694,646	9,780	25.7%

Mustang

	Fuel Used (BCF)	Generation (MWH)	Heat Content (MMBtu)	Heat Rate (Btu/kwh)	Capacity Factor
2013	4,904	473,962	5,210,472	10,993	11.4%
2014	3,976	377,304	4,248,223	11,259	9.1%
2015	1,248	114,536	1,342,530	11,721	2.8%
2016	3,702	358,587	3,901,452	10,880	11.0%
4-year Total	13,830	1,324,389	14,702,677	11,101	8.4%

Attorney General of Oklahoma
Data Request AG-8
Cause No. PUD 201700496

- 8-1 For each of the seven 66 megawatt ("MW") natural gas-fired combustion turbines ("CT") located at the Mustang Plant, please provide the following:**
- a) A timeline of projected and actual milestone dates from the beginning of construction to the commercial in-service date;**
 - b) Itemized budgeted and actual construction costs greater than \$1 million;**
 - c) A detailed narrative that describes how the Company developed its budgeted costs;**
 - d) A detailed narrative that describes how the Company maintained cost discipline for the Project, including in the response how frequently the Company compared its actual costs to date to budget; and**
 - e) All documents that track actual costs for the Mustang Modernization Project to budgeted costs.**

Response*:

- a. Please see Attachment AG 8-1_Att1.
- b. Please see attachment AG 8-1_Att2. Note: OG&E also provided a forecast of costs since not all projects are complete.
- c. The Company engaged Burns & McDonnell ("BMCD") to perform a FEP (Front End Planning) effort to perform conceptual engineering and project planning. Capital cost estimate was part of the FEP effort. The capital cost is developed using a bottoms-up approach.

In a bottoms-up approach, quantities of commodities such as pipes, cables and wiring, concrete, steel, instrumentations, etc. are developed using conceptual engineering documents generated for the project including site arrangement, process flow diagrams, electrical one-line, preliminary duct bank routing, equipment list, cable schedules, pipeline list, etc. Gas turbine pricing is based on budgetary quotes from suppliers. Balance of plant equipment pricing is either based on historical pricing from previous projects or budgetary quotes from suppliers if no historical pricing existed.

Construction costs were estimated based on BMCD's historical information and experience and that there is sufficient labor pool to draw from in the Oklahoma City area. The productivity factors were developed based on BMCD project history for labor in the area. Wage rates were taken from means rate in 2014 for the Oklahoma City area.

In addition to the direct cost described above, the capital cost estimate also includes project indirect costs. These costs include engineering, construction management, escalation, and project contingency. Escalation was included from the time the estimate was performed to the point of contract award (as per the project schedule at that time) for equipment, the midpoint of construction for construction labor and equipment, and the midpoint of engineering for engineering costs. Material and commodity was escalated to a point of approximately 6 months on average before the start of construction for each discipline.

- d. To control costs, the project team has a dedicated cost engineer who routinely coordinates with the project leadership team to stay apprised of actual costs as compared to budgeted costs and makes adjustments accordingly.
- e. This response is considered confidential. Copies of the confidential response will be provided to those parties that have signed the protective order.

Response provided by:	<u>Robert Burch</u>
Response provided on:	<u>March 9, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-558-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

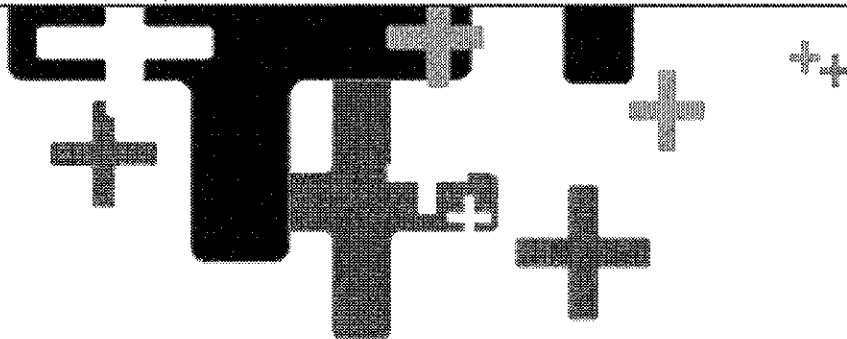
Mustang CT's

Budgeted and actual construction costs greater than \$1 million			
Contract	Budgeted \$	Actual to date \$	Forecasted \$
Auxiliary Transformer	\$1,516,900	\$731,600	\$767,260
Cable Bus Duct	\$1,187,400	\$602,156	\$617,300
Continuous Emissions Monitoring CEMS	\$1,875,382	\$1,270,767	\$1,398,844
Demineralizer	\$4,597,400	\$3,286,719	\$3,469,781
Field Erected Tanks	\$2,047,000	\$2,015,081	\$2,065,669
Foundations/Substructures	\$27,432,014	\$27,268,451	\$27,411,925
Fuel Gas Conditioning & Heating	\$2,769,970	\$1,416,843	\$1,494,743
Gas Turbines	\$170,255,979	\$170,642,601	\$170,642,601
General Contractor	\$48,722,109	\$42,440,719	\$48,400,000
Generator Circuit Breaker	\$1,654,200	\$1,250,981	\$1,312,380
Generator Step-up Transformers	\$4,401,303	\$2,993,770	\$3,072,707
Packaged Electrical Equipment PDC	\$5,078,600	\$4,045,599	\$4,156,340
Piling	\$5,413,247	\$2,789,821	\$2,789,821
Pre-engineered Buildings	\$3,584,687	\$3,683,363	\$3,975,936
Site Finishing	\$3,743,189	\$3,143,189	\$3,743,189
Site Preparation	\$3,858,143	\$4,792,770	\$4,827,180
Switchyard Construction	\$2,229,031	\$2,229,031	\$2,229,031
Switchyard Construction (OG&E)	\$5,924,702	\$4,435,209	\$4,435,209
T-Line Foundations	\$1,830,140	\$1,823,091	\$1,823,091
B&McD Engineering, CM, Startup	\$32,642,055	\$31,556,558	\$31,869,512
Subtotal	\$330,763,450	\$312,418,319	\$320,502,519
	Total Delta		(\$10,260,930)

OKLAHOMA GAS AND ELECTRIC COMPANY

INTEGRATED RESOURCE PLAN

Prepared 2015 by: Oklahoma Gas and Electric Company



OG+E[®]

Seminole units) by 2017 and that ACI is installed on the coal units by the April 2016 MATS deadline to achieve compliance with respect to mercury standards.⁹

b) Expansion Plan Options

Three expansion plans were developed by considering the SPP 12% planning capacity criteria. As explained in the Retirement Assumptions section, the Mustang units will be retired and options for replacement are analyzed as part of the overall future expansion plan. All expansion plans examined are consistent with OG&E's "2020 Goal" with no incremental fossil fuel generation added to the resource portfolio until 2020.

OG&E utilizes a screening process as described in Section IV to narrow the options to those that are feasible to OG&E. In this screening process, Combined Cycle units and Combustion Turbine units met all the screening criteria for consideration. OG&E obtained more specific unit data from Sargent and Lundy in order to model the expansion units in the SPP IM. The CCs and CTs were then distributed across the 30-year forecast period with in-service dates as necessary to meet OG&E's projected capacity needs. Each of the three primary options adds capacity beginning in 2018 to meet the capacity need that will result from the retirement of the Mustang units. They represent an all CC-option ("CC"), a CT followed by CCs ("CT"), and an option that reflects the flexibility offered by smaller sized CT's by spreading them out over 2 years along with a mix of CTs and CCs ("Spread CT"). These options are presented in Table 16.

Table 16: Expansion Plans

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2031
CC	560 MW CC					560 MW CC		560 MW CC					560 MW CC
CT	400 MW CTs		560 MW CC				560 MW CC					560 MW CC	
Spread CT	280 MW CTs	120 MW CTs	560 MW CC				560 MW CC					560 MW CC	

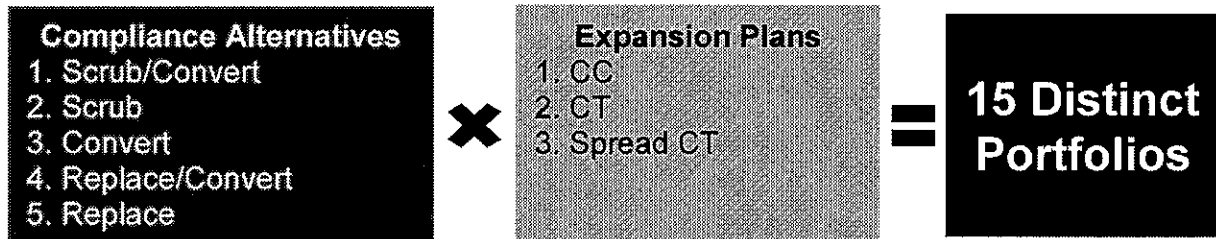
c) Portfolio Identification

The five Regional Haze compliance alternatives were combined with the three expansion plan options to form 15 distinct portfolios. This collection of portfolios allows OG&E to compare the compliance alternatives while also offering insights on the

⁹ Specific installation dates for emission controls must be assumed for modeling purposes and are based on current OG&E plans although the actual installation dates may change somewhat as the development plans are finalized.

benefits of each expansion option. This also allowed OG&E to determine if or how expansion plan options impact the Regional Haze compliance alternatives. These 15 portfolios are shown in Figure 9.

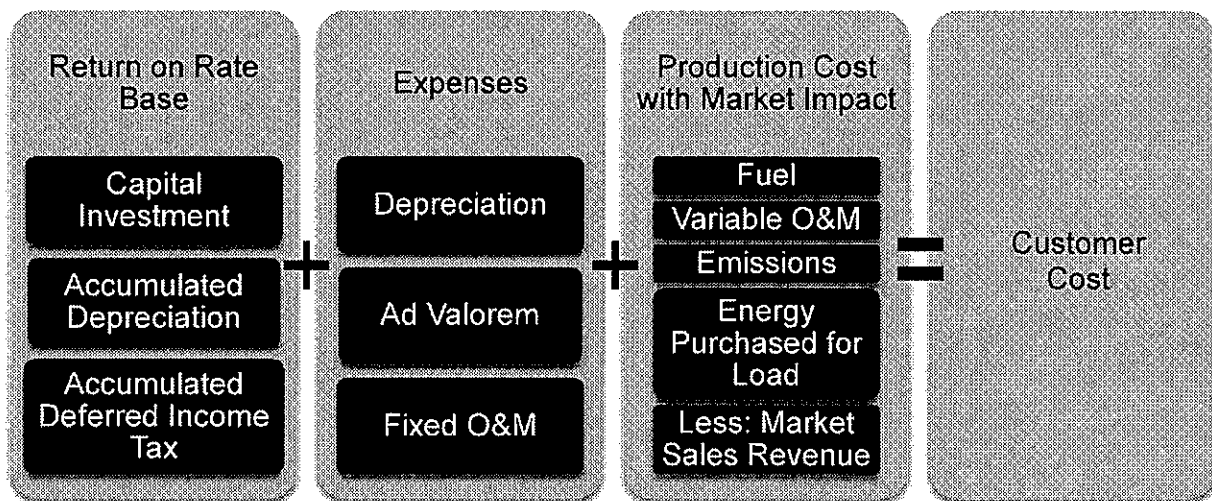
Figure 9: Portfolio Development



2. Portfolio Modeling Analysis

The modeling analysis determines customer costs as measured over the 30-year forecast period. The portfolios are first analyzed using the "Base Case" set of forecast assumptions, before testing the impacts of alternative sets of assumptions by performing scenario and sensitivity analyses. The production cost with market impact of each portfolio is determined utilizing PCI GenTrader® software with a model set-up that represents OG&E's generating unit characteristics and operating constraints. The OG&E generators are dispatched against the IM price forecast to simulate operations in the SPP IM. The return on rate base and non-production expenses associated with each portfolio is then added to production costs with market impacts to determine the customer costs as shown in Figure 10.

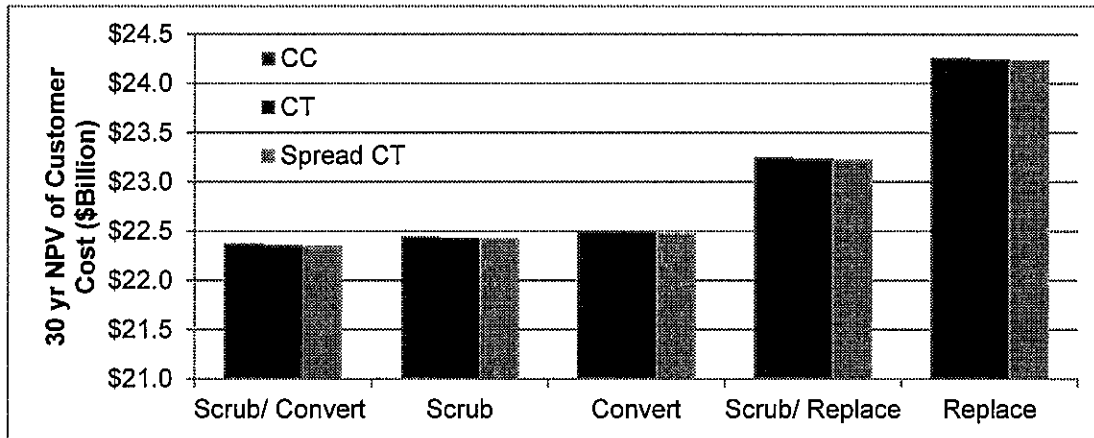
Figure 10: Customer Cost Components



a) Compliance Alternative and Expansion Plan Analysis

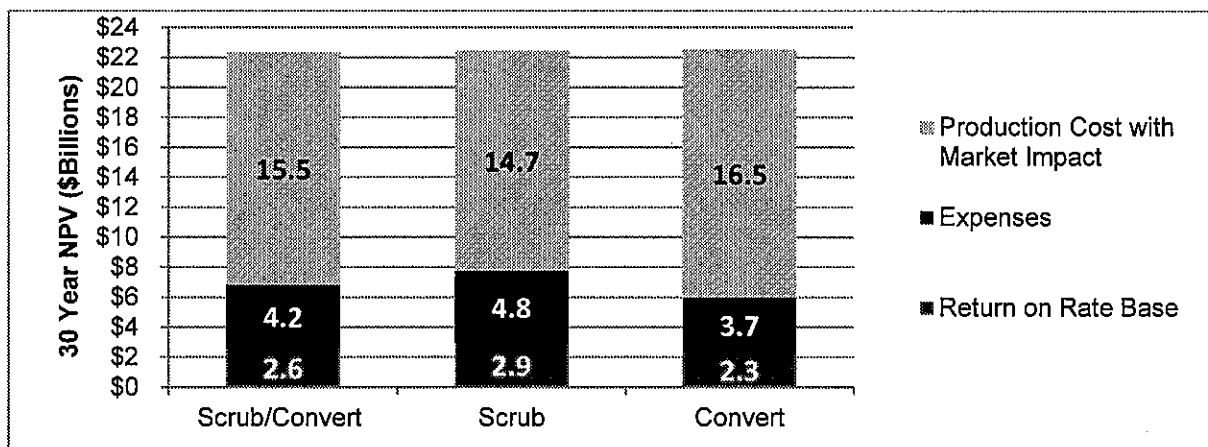
The results of the modeling are provided in a 30-year Net Present Value ("NPV") of customer costs format for each compliance alternative and expansion plan in Figure 11.

**Figure 11: Compliance Alternative and Expansion Plan Comparison
(2014 \$Billions)**



As shown in this figure, the “Replace” alternatives are considerably more expensive than the “Convert” alternatives. The “Scrub” and “Convert” alternatives are relatively close (as well as the combined “Scrub/Convert” alternative). There is also minimal difference among the three expansion options although they are consistently ranked from lowest cost to highest cost as follows: Spread CT, CT, and CC. The expansion options do not appear to influence the comparison among environmental compliance alternatives. For the remaining analysis shown in this report, the Spread CT expansion plan will be used since it is the least cost option. To better understand the dynamics between compliance alternatives it is helpful to consider the customer cost components of the three lowest cost compliance alternatives as identified in Figure 12.

**Figure 12: Cost Component Comparison for Select Compliance Alternatives
(2014 \$Billions)**



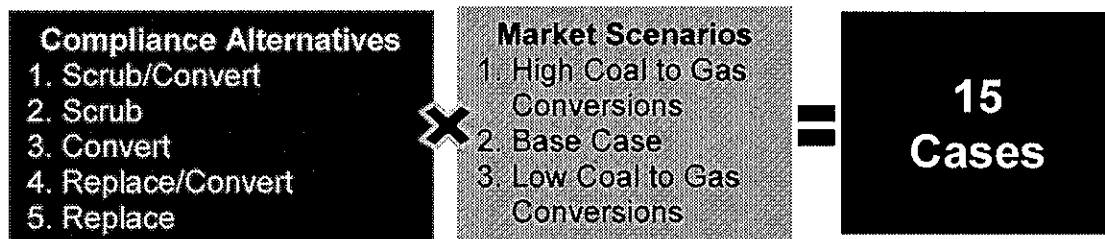
As shown, the alternatives that include scrubbing have higher return on rate base and expenses but lower production cost with market impact. The lower production cost with market impact reflects the margins that customers receive from OG&E selling coal generation into the market. The alternatives that include converting coal to natural gas have lower return on rate base and expenses but higher production cost with market impacts because OG&E has less coal generation to sell into the market. Comparing the production cost with market impact of the three compliance alternatives illustrates the value of coal generation as compared to market prices.

The next step in the analysis is to consider how these portfolios perform when subject to different IM price scenarios and sensitivity analyses around fuel prices, carbon prices, load forecast and capital costs.

b) Scenario Analysis

As described in Section III, OG&E developed three market scenarios that were defined to capture the uncertainty of other SPP IM participant responses to environmental compliance requirements with respect to their coal units. OG&E's compliance alternatives were tested in each market scenario to determine the impact that other market participants could have on decisions made by OG&E. The Spread CT expansion plan is used with each compliance alternative for the market scenario combinations illustrated in Figure 13.

Figure 13: Compliance Alternatives and Market Scenario Combinations



The 30-year NPV of customer costs for each compliance alternative in the scenario analysis is provided in Table 17.

Table 17: Market Scenario 30-year NPVCC Values (2014 \$Billions)

	Scrub/ Convert	Scrub	Convert	Scrub/ Replace	Replace
High Conversion	\$22.4	\$22.3	\$22.7	\$23.0	\$24.0
Base Case	\$22.4	\$22.4	\$22.5	\$23.2	\$24.2
Low Conversion	\$22.2	\$22.4	\$22.2	\$23.3	\$24.3

The "Convert" compliance alternative is impacted by a change in market prices by about \$0.5 billion (\$22.2 to \$22.7 billion) and is more than the other alternatives. Again, this is

Attorney General of Oklahoma
Data Request AG-12
Cause No. PUD 201700496

12-8 Please refer to the direct testimony of Russell R. Evans, Ph.D. Please confirm whether Dr. Evans has testified to any specific recommendation regarding any component of OGE's rates or service in this cause.

Response*:

Dr. Evans makes both general and specific recommendations regarding OGE's rates and services. The overarching general recommendation is that this cause (and the ROE determination specifically) be viewed through the broad lens of resource allocation rather than through the narrow lens of customer utility bills and utility profits. From the general recommendation, the following specific recommendations follow:

- I recommend that the ROE determination be considered against the totality of the impacts that follow including the spillover economic and social impacts from optimally resourcing a regional headquarter; an overview of these economic and social impacts are provided in my testimony
- I recommend that Dr. Morin's CAPM estimate of ROE be considered from the prospective that his risk-free return as reflected in 30-year yield estimated forecasts may be conservative as they reflect an immediately preceding period of extraordinary monetary policy
- Finally, my testimony is intended to supplement and support the testimonies of Dr. Roger Morin and Mr. Stephen Merrill so the economic concepts and context provided in my testimony serves as an additional layer of foundation for the specific recommendations included in those submissions

Response provided by:	<u>Russell Evans</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey 405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

Attorney General
Data Request AG-7
Cause No. PUD 201700496

- 7-9 Please refer to Direct Testimony of Russell R. Evans, Ph.D., page 5, lines 19 through 26 where he states: “Establishing a fair rate of return relative to capital’s next best use is critical to ensuring an optimal allocation of resources into the firm. Optimal in this context again refers to levels of an activity that maximize social well-being, so a suboptimal allocation of resources necessarily implies that the resulting production will be socially inefficient in some way.” On page 50, lines 18 through 21 of the direct testimony of Roger A. Morin, Ph.D., he states that “a just and reasonable ROE for OG&E’s electric utility operations in the State [of] Oklahoma is 9.9%.” Is it Dr. Evan’s testimony that any ROE below 9.9 percent will lead to a suboptimal allocation of resources?

Response*: It is Dr. Evans’ testimony that firm profits are an important signal to resource markets. The profit signal serves to organize activity in the modern economy by allocating productive resources – labor and capital – across competing uses. It is Dr. Evans’ testimony that serving the public interest in this rate case is less about protecting consumers from higher rates and more about protecting consumers from a suboptimal allocation of resources into the economy and a socially inefficient operation of the utility. Dr. Evans’ testimony does not address a specific recommendation regarding ROE in this case.

Response provided by:	<u>Russell Evans</u>
Response provided on:	<u>February 20, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-557-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

Oklahoma Industrial Energy Consumers
Data Request OIEC-5
Cause No. PUD 201700496

5-4 Please indicate if Dr. Evans is proposing a specific return on equity (ROE) in the current proceeding.

Response*: Dr. Evans is not proposing a specific ROE in this Cause.

Response provided by:	<u>Russell Evans</u>
Response provided on:	<u>March 27, 2018</u>
Contact & Phone No:	<u>Jason Bailey 405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.