

BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF)
BRANDY L. WREATH, DIRECTOR OF THE)
PUBLIC UTILITY DIVISION, FOR)
DETERMINATION OF THE CALCULATION)
OF LOST NET REVENUES AND SHARED)
SAVINGS PURSUANT TO THE DEMAND)
PROGRAM RIDER OF OKLAHOMA GAS)
AND ELECTRIC COMPANY)

CAUSE NO. PUD 201500153

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CORPORATION COMMISSION
OF OKLAHOMA

Responsive Testimony

of

Philip R. Bartholomew

on behalf of

Oklahoma Gas and Electric Company

May 13, 2015

Philip R. Bartholomew
Responsive Testimony

1 Q. **Would you please state your name and business address?**

2 A. My name is Philip R. Bartholomew. My business address is 321 N. Harvey Ave.,
3 Oklahoma City, Oklahoma 73102.

4
5 Q. **By whom are you employed and in what capacity?**

6 A. I am the Regulatory Analytics Manager for Oklahoma Gas and Electric Company
7 (“OG&E” or “Company”).

8
9 Q. **Would you please summarize your education and professional background?**

10 A. I graduated from Bentley University (formerly Bentley College) in 1983 with a Bachelor
11 of Science degree in Management and concentrations in both Economics and Computer
12 Science. I received my Masters in Business Administration with high honors from
13 Oklahoma City University in 1999.

14 I have been working in the utility pricing and load research fields for the last 32
15 years starting as an analyst in 1983. I was promoted to senior analyst in 1986. I became
16 a lead analyst for OG&E in 1995 later becoming manager of Load Research before
17 moving to the pricing staff in 2009. In 2014 I moved to my current position in the
18 Product Development department. I am a former Vice-Chairman of the Association of
19 Edison Illuminating Companies Load Research Committee. In addition, I have completed
20 numerous load research and regulatory courses including:

- 21 • Association of Edison Illuminating Companies Advanced Statistics in Load
22 Research (Georgia Institute of Technology -1986)
- 23 • Edison Electric Institute’s “EEI Electric Rate Fundamentals Course” (Indiana
24 University – 1996)

25
26 Q. **Have you testified previously before the Oklahoma Corporation Commission
27 (“Commission”)?**

28 A. Yes. I have testified in Cause Nos. PUD 200800398, PUD 200900200, PUD 201100087
29 and PUD 201200134.

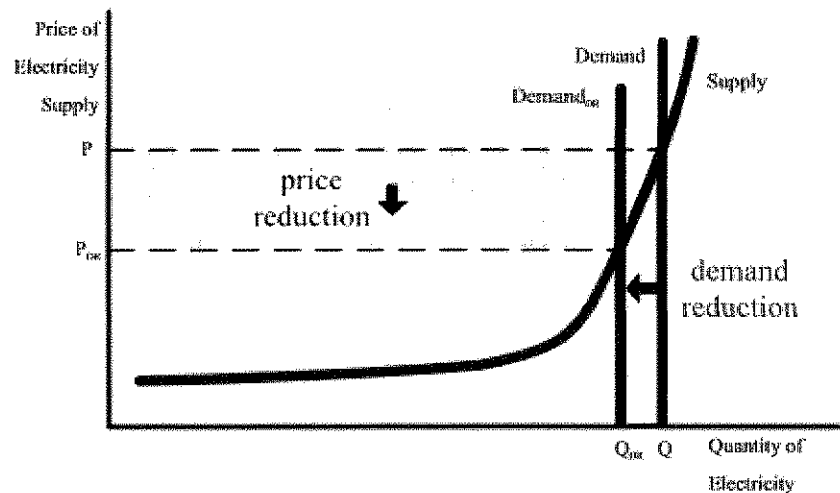
1 Q. **What is the purpose of your testimony in this cause?**

2 A. The purpose of my testimony is to explain how OG&E's lost net revenue calculation is
3 consistent with the Demand Program rider. I describe OG&E's methodology to calculate
4 lost net revenues for the SmartHours program and the basis for the amount of lost net
5 revenues submitted by OG&E for 2013. I also respond to PUD witness Kathy
6 Champion's allegation that OG&E has confused recovery of lost revenues with revenue
7 difference.

8
9 Q. **How did you approach calculating lost net revenues for the SmartHours program in
10 the 2013 Demand Program case?**

11 A. I filed direct testimony in Cause No. PUD 201200134 (2013-15 Demand Program case)
12 which explained how OG&E would calculate lost net revenues for the SmartHours
13 Demand Response program. My approach to calculating lost net revenues for the
14 SmartHours program was a two-step process. First, I calculated the Base Revenues that
15 customers would have paid had they remained on OG&E's standard residential tariff.
16 Base Revenues are the revenues allowed through a tariff to recover the class revenue
17 requirement. Next, I calculated Base Revenues actually paid by customers billed on either
18 VPP or TOU tariffs (the SmartHours tariffs). The difference between these two Base
19 Revenue values results in the amount of lost net revenues for SmartHours. Table 1 below
20 depicts my two-step process as described above. The y-axis provides both the original
21 price paid by customers and the price paid after customers move to a SmartHours tariff.
22 The x-axis provides both the amount of energy customers would have used had they
23 remained on the standard tariff and the quantity actually used after moving to the
24 SmartHours tariff. The rectangular area created by points P and Q on the graph results in
25 the same value as step one in my process. The rectangular area created by points P_{DR} and
26 Q_{DR} results in the same value as step two in my process. The shaded area is lost net
27 revenues.

Table 1: Process for Calculating Lost Net Revenues



Source: “Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them”

- 1 Q. **Do other regulatory entities use the same process for calculating lost net revenues?**
- 2 A. Yes. The Department of Energy (“DOE”) and the California Public Utilities Commission
- 3 support calculating lost net revenues using the same approach I followed to calculate lost
- 4 net revenues for SmartHours. See DOE’s February 2006 report to the U.S. Congress
- 5 titled “Benefits of Demand Response in Electricity Markets and Recommendations for
- 6 Achieving Them”¹ and also the California Public Utilities Commission “2010 Demand
- 7 Response Cost Effectiveness Protocols.”²
- 8
- 9 Q. **During the 2013 Demand Program case, did you have interactions with PUD staff**
- 10 **regarding OG&E’s projected lost net revenues?**
- 11 A. Yes, during the course of the Demand Program case I had several discussions with Staff
- 12 witness Nicholas Fiegel regarding the calculation of lost net revenue. Specifically, these
- 13 conversations consisted of how OG&E would develop baseline information and how that
- 14 information would be used to calculate lost net revenues. These discussions included how
- 15 OG&E would calculate lost net revenues for the 12-month program year and use of price-
- 16 day information which resulted in the \$3.5 million projection. I think these discussions

¹http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/DOE_Benefits_of_Demand_Response_in_Electricity_Markets_and_Recommendations_for_Achieving_Them_Report_to_Congress.pdf

² <http://www.cpuc.ca.gov/PUC/energy/Demand+Response/Cost-Effectiveness.htm>

1 were pivotal in his understanding of my process and led to his statement, “[t]hat he found
2 the mechanism for calculating the shared net benefit and lost net revenues to be
3 acceptable.”³ Notably, neither Mr. Fiegel, nor any other party to the case, objected to the
4 lost net revenue calculation proposed by OG&E or the projected amount of lost net
5 revenue.

6
7 **Q. Please explain how you interpret the formula to calculate lost net revenues in the**
8 **Demand Program rider.**

9 A. The rider provides the formula for calculating prior period lost net revenue.⁴ That
10 formula is: $PPLNR = PPTES \times EFC + PPTDS \times DC$. SmartHours customers do not
11 have a demand charge; therefore PPTDS and DC are not applicable in calculating
12 SmartHours lost net revenues and can be eliminated from the formula. The formula to
13 calculate SmartHours lost net revenues becomes: $PPLNR = PPTES \times EFC$. Total
14 Energy Savings (PPTES) is the difference between base line energy sales and actual
15 energy sales. Referring back to Table 1, the difference between Q and Q_{DR} is Total
16 Energy Savings. Substituting the difference between baseline sales and actual sales for
17 PPTES in the formula results in: $PPLNR = (Baseline\ Sales - Actual\ Sales) \times EFC$.

18 Next, I expand the formula using the distributive property so that the EFC is
19 distributed to both terms (Baseline Sales and Actual Sales). This results in the formula:
20 $PPLNR = Baseline\ Sales \times EFC - Actual\ Sales \times EFC$. The EFC for Baseline Sales is
21 the standard tariff price. The EFC for Actual Sales is SmartHours tariff price.
22 Referencing back to Table 1, this becomes the same as $(P \times Q) - (P_{DR} \times Q_{DR})$ which is
23 reflected in the shaded area. This revenue difference is the lost net revenue from the
24 SmartHours program.

25
26 **Q. How do you respond to Ms. Champion’s testimony regarding lost revenues versus**
27 **revenue difference?**

28 A. As explained in further detail by Mr. Rowlett, OG&E has not confused recovery of lost
29 revenues with a revenue difference. Referencing both Table 1 and my response to the

³ See Order No. 605737, Attachment B – Summary of Filed Testimony and Statements of Position, Page 14, paragraph 3

⁴ See Fourth Revised Sheet, No. 51.72 approved March 1, 2013 (Order No. 605737).

1 previous question, I believe it is clear that lost net revenue and revenue difference are the
2 same for the SmartHours program. The shaded area in Table 1 represents revenue
3 difference for the SmartHours program. In the answer to the previous question, I
4 explained how the lost net revenue formula in the Demand Program rider is
5 mathematically equal to the same shaded area in Table 1. The only way this can be true
6 is if lost net revenues equals revenue difference.

7
8 **Q. Have you identified differences between your process and Ms. Champion's process**
9 **for calculating SmartHours lost net revenues?**

10 A. Yes, I have identified three differences. First, I believe Ms. Champion calculates the lost
11 net revenues for SmartHours as if SmartHours were an energy efficiency program.
12 Second, I believe Ms. Champion applied the incorrect tariff to derive her EFC values.
13 Finally, I identified a mathematical error in Ms. Champion's calculation of summer total
14 baseline energy.

15
16 **Q. Please elaborate on the differences you identified.**

17 A. SmartHours is a demand response program as defined by the DOE and CPUC.
18 Therefore, the lost net revenues attributed to the SmartHours program are calculated by
19 taking into account changes in rates, time of use and seasonal differences. This is the
20 method I used. Regarding the second difference, EFC values are based on the tariff
21 under which the customer saved energy. This means SmartHours customers, when they
22 saved energy, were either on the Variable Peak Pricing ("VPP") or Time of Use ("TOU")
23 tariffs. Therefore, their EFC should be derived from those tariffs. Although Ms.
24 Champion's testimony states she used the EFC factor for each SmartHours class⁵, my
25 review of her model indicates she derived an EFC from the standard tariff. Using the
26 EFC derivation supported by the Company, Ms. Champion's modeled lost net revenues
27 increases from \$4.9 million to \$9.3 million. Regarding the mathematical error, after
28 reviewing Ms. Champion's model, I observed that Ms. Champion's total energy savings
29 calculation was nearly double what OG&E reported. Ms. Champion estimated total
30 energy savings of approximately 75 million kWh, while OG&E reported total energy

⁵ Champion Direct, p. 7, lines 13-16
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1 savings of approximately 39 million kWh. Applying both OG&E's EFC derivation and
2 OG&E's reported total energy savings calculation, Ms. Champion's modeled lost net
3 revenues would be \$4.3 million. This result occurs because Ms. Champion doubled the
4 actual total energy savings which indicates a flaw in her lost net revenue model.
5

6 **Q. Did you calculate a projected amount of lost net revenues associated with the**
7 **SmartHours program in the 2013 Demand Program case?**

8 A. Yes, as explained in my rebuttal testimony, I applied my methodology to project the 2013
9 lost net revenues for the SmartHours program. On page 3, lines 7-8 of my rebuttal
10 testimony, I projected that incremental lost net revenue would be approximately \$3.49
11 million. This projection was based on energy use results from the 2010 Norman
12 SmartHours pilot and an estimated participant total of 41,500.
13

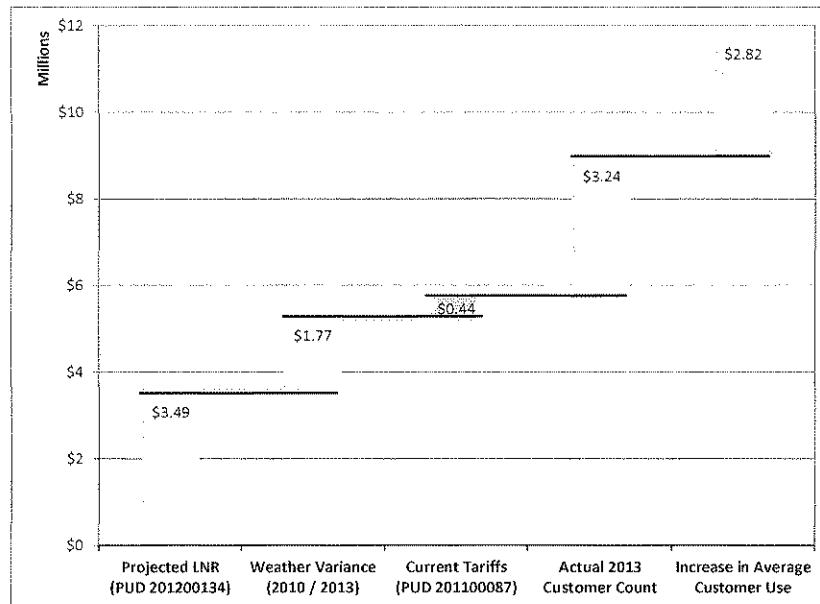
14 **Q. Why is the amount of actual lost net revenues submitted by the Company different**
15 **than your projected amount?**

16 A. There are four factors that caused the actual 2013 lost net revenue calculation to be
17 higher than the projected amount.

- 18 • Cooler weather in 2013
- 19 • Tariff changes
- 20 • Greater participation in SmartHours
- 21 • Increase in average energy use by SmartHours customers

22 Table 2, below, illustrates how each factor affects lost net revenue compared to the
23 projection.

Table 2—Changes to Projected Lost Net Revenue



1 Q. **How did weather contribute to higher actual lost net revenues than initially**
 2 **projected?**

3 A. As I mentioned above, the projected lost net revenues was based on the 2010 Norman
 4 Pilot Study. Calendar year 2010 was very hot (20% above normal). The higher
 5 temperature resulted in a lower projection of lost net revenues. However, in calculating
 6 the actual lost net revenues, I used weather data from the actual year the lost net revenues
 7 were accrued, which was 2013. 2013 was cooler (1% below normal)⁶ which resulted in
 8 higher lost net revenues. Weather affects how much energy is consumed by residential
 9 and general service customers. As usage increases so does the cost of energy which is
 10 how OG&E determines which price is presented to SmartHours customers. For example,
 11 when temperatures are cool, SmartHours customers may see a low price-day value and
 12 when temperatures are hot, SmartHours customers may see a critical price-day value. The
 13 price-day value greatly affects the amount of lost net revenues experienced by OG&E.
 14 There is an inverse relationship between lost net revenues and the price-day value. This
 15 means that the Company's lost net revenue is higher when the price-day values are lower
 16 and, conversely, the Company's lost net revenue is lower when the price-day values are
 17 higher.

⁶ National Oceanic Atmospheric Agency (NOAA)
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1 Q. **Please explain the tariff change.**

2 A. When I calculated the projected lost net revenues in the 2013 Demand Program case, I
3 used the current applicable standard tariffs at that time, which were the tariffs approved
4 in OG&E's rate case, Cause No. PUD 200800398. OG&E initiated new tariffs resulting
5 from its rate case, Cause No. PUD 201100087 after the Company completed its 2013
6 Demand Program case. To calculate actual lost net revenue, I used the new tariffs which
7 increased the projected lost net revenue.

8
9 Q. **How does greater participation affect lost net revenue?**

10 A. My projection was based on 41,500 SmartHours customers. Due to the success of the
11 program, participation increased to approximately 74,000. When I calculated the actual
12 amount of lost net revenues, I used the actual number of participants.

13
14 Q. **How does the increase in average energy use by SmartHours customers affect lost
15 net revenue?**

16 A. The SmartHours customers in 2013 used more energy than the customers in the 2010
17 Norman pilot. The average residential 2010 SmartHours pilot customer's annual baseline
18 energy use was 11,906 kWh. In 2013, the average residential SmartHours customer's
19 annual baseline energy use increased to 14,631 kWh. This resulted in higher lost net
20 revenue.

21
22 Q. **Do you believe your process for calculating lost net revenue follows the Demand
23 Program rider?**

24 A. Yes. The Demand Program rider provides the basis for which OG&E can calculate and
25 request recovery of lost net revenue from its SmartHours program. My process follows
26 the tariff and accurately calculates lost net revenues based on the facts presented through
27 the 2013 Demand Program year. My results are an accurate representation of lost net
28 revenue and lost net revenue is not overstated.

29
30 Q. **Does this conclude your testimony?**

31 A. Yes.