

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the matter of:)
)
ELECTRONIC INVESTIGATION OF THE) Case No. 2018-00044
REASONABLENESS OF THE ENERGY)
EFFICIENCY AND CONSERVATION RIDER OF)
COLUMBIA GAS OF KENTUCKY, INC.)

**PREPARED DIRECT TESTIMONY OF
WILLIAM STEVEN SEELYE
ON BEHALF OF COLUMBIA GAS OF KENTUCKY, INC.**

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PREPARED DIRECT TESTIMONY OF WILLIAM STEVEN SEELYE

1 **Q: Please state you name and business address.**

2 A: My name is William Steven Seelye, and my business address is The Prime Group,
3 LLC, 6435 West Highway 146, Crestwood, Kentucky, 40014.

4

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

6 A: I am the managing partner for The Prime Group, LLC, a firm located in Crestwood,
7 Kentucky, providing consulting and educational services in the areas of utility
8 regulatory analysis, revenue requirement support, cost of service, rate design and
9 economic analysis.

10

11 **Q: On whose behalf are you testify in this proceeding?**

12 A: I am testifying for Columbia Gas of Kentucky, Inc. ("Columbia Gas" or
13 "Company"), which provides natural gas sales and transportation services in
14 Kentucky.

15

16 **Q: Please describe your educational and professional background.**

17 A: I received a Bachelor of Science degree in Mathematics from the University of
18 Louisville in 1979. I have also completed 54 hours of graduate level course work

1 in Industrial Engineering and Physics. From May 1979 until July 1996, I was
2 employed by Louisville Gas and Electric Company ("LG&E"). From May 1979
3 until December, 1990, I held various positions within the Rate Department of
4 LG&E. In December 1990, I became Manager of Rates and Regulatory Analysis.
5 In May 1994, I was given additional responsibilities in the marketing area and was
6 promoted to Manager of Market Management and Rates. I left LG&E in July 1996
7 to form The Prime Group, LLC, with two other former employees of LG&E. Since
8 leaving LG&E, I have performed or supervised the preparation of cost of service
9 and rate studies for over 150 investor-owned utilities, rural electric distribution
10 cooperatives, generation and transmission cooperatives, and municipal utilities. A
11 more detailed description of my qualifications is included in Exhibit Seelye-1.

12
13 **Q. Have you ever testified before any state or federal regulatory commissions?**

14 A. Yes. I have testified in over 75 regulatory proceedings in 11 different jurisdictions
15 including the Kentucky Public Service Commission ("Commission"). A listing of
16 my testimony in other proceedings is included in Exhibit Seelye-1.

17
18 **Q: Please describe your experience with demand side management (DSM)**
19 **programs and cost recovery mechanisms.**

1 A: In Kentucky, I have assisted the following utilities with the development of DSM
2 cost recovery mechanisms: Louisville Gas and Electric Company, Kentucky
3 Utilities, Delta Natural Gas Company, and Columbia Gas. I have also developed
4 a DSM cost recovery mechanism for Nova Scotia Power Company. I have assisted
5 numerous utilities in the economic evaluation of their DSM, energy efficiency, and
6 demand-response programs and have worked with utilities in maximizing the
7 benefit derived from their existing demand side management programs. I have
8 also developed time-of-use, interruptible, real-time pricing, cogeneration, and
9 other rates designed to encourage customers to modify their demand and usage
10 patterns.

11

12 **Q: Did you submit testimony in support of Columbia Gas's current Energy**
13 **Efficiency and Conservation Rider (EECR).**

14 A: Yes. Columbia Gas proposed its current EECR rate schedule in Case No. 2009-
15 00141, which was a general rate case. I submitted testimony in support of the
16 EECR in that proceeding. I also submitted testimony in Case No. 2016-00107 in
17 connection with the five-year review and renewal of Columbia's programs. In its
18 Order in that proceeding dated October 11, 2016, the Commission approved
19 Columbia's programs through June 30, 2021.

20

1 **Q: What is the purpose of your testimony in this proceeding?**

2 A: The purpose of my testimony is to provide a general assessment of the
3 effectiveness of the EECR rate schedule and to recommend that the rider continue
4 to remain in effect in its current form. I will provide a general assessment of the
5 effectiveness of the current level of funding for DSM and energy efficiency
6 programs and of the effectiveness of the programs that have been developed
7 through collaborative processes. I will also comment on the adequacy of the
8 programs on a going forward basis. I will also explain the importance of Columbia
9 Gas's DSM and energy efficiency programs both to Columbia Gas and to its
10 customers. I testify that Columbia Gas's current level of funding for DSM and
11 energy efficiency is reasonable and that the current programs being offered are
12 also reasonable.

13

14 **Q: Please describe Columbia Gas's EECR rate schedule.**

15 A: Columbia Gas's EECR is applicable to residential customers served under Rate
16 Schedule GSR and commercial customers service under Rate Schedule GSO. It is
17 designed to provide for the recovery of DSM program costs, to provide for the
18 recovery of net revenues from lost sales due to the implementation of DSM
19 programs, and to provide a small incentive for Columbia Gas to implement DSM
20 programs. While the EECR rate schedule is applicable to both residential and

1 commercial rate schedules, Columbia Gas currently offers no Energy
2 Efficiency/Conservation Programs for commercial customers and therefore the
3 applicable EECR charge for commercial rate schedules is zero. Columbia Gas's
4 current EECR schedule is included as Exhibit Seelye-2.

5 Columbia Gas's EECR provides a dollar-for-dollar recovery of costs
6 incurred by the Company to implement and operate DSM programs that have
7 been approved by the Commission. Because DSM and energy efficiency programs
8 by design result in a reduction in sales to customers, the EECR rate schedule
9 provides for the recovery of revenues from lost sales due to the implementation of
10 those programs. The EECR also provides a small incentive designed to encourage
11 the Company to develop and implement DSM programs and includes a
12 reconciliation adjustment to ensure that there will not be any over- or under-
13 recovery of either DSM program costs or revenues from lost sales under the
14 mechanism.

15 Columbia Gas's EECR thus consists of the following four components: (1) a
16 Energy Efficiency/Conservation Program Cost Recovery (EECPCR) component
17 that provides for the recovery of DSM program costs, (2) an EECR Revenue from
18 Lost Sales (EECPLS) component that provides for the recovery of revenues from
19 lost sales, (3) an EECR Incentive (EECPI) component that is designed to encourage
20 Columbia Gas to develop and implement DSM programs, and (4) an EECR Balance

1 Adjustment (EECPBA) that reconciles for any over- or under-recovery of program
2 costs, revenues from lost sales, and incentives.

3
4 **Q: Is Columbia Gas's EECR rate schedule consistent with the DSM mechanism**
5 **described in KRS 278.285?**

6 A: Yes. Utilities in Kentucky can propose a DSM cost recovery mechanism pursuant
7 to KRS 278.285. Subsection 2 of KRS 278.285, of states as follows:

8
9 A proposed demand-side management mechanism including:

10
11 (a) Recover the full costs of commission-approved demand-side
12 management programs and revenues lost by implementing these
13 programs;

14 (b) Obtain incentives designed to provide financial rewards to
15 the utility for implementing cost-effective demand-side
16 management programs; or

17 (c) Both of the actions specified

18
19 may be reviewed and approved by the commission as part of a
20 proceeding for approval of new rate schedules initiated pursuant to
21 KRS 278.190 or in a separate proceeding initiated pursuant to this
22 section which shall be limited to a review of demand-side
23 management issues and related rate-recovery issues as set forth in
24 subsection (1) of this section and in this subsection.
25

26 In accordance with KRS 278.285, Columbia Gas's EECR provides for recovery of
27 the full cost of commission-approved demand-side management programs,
28 provides for recovery of revenue lost by implementing these programs, and allows

1 the Company to obtain incentives designed to financial rewards for implementing
2 cost-effective demand-side management programs. Also, consistent with the
3 practice for most cost recovery mechanisms that have been approved by the
4 Commission over the years, the EECR rider includes an over- and under-recovery
5 mechanism that ensures that the Company doesn't collect more or less than the
6 amounts determined by the other components of the EECR.

7
8 **Q: Without a DSM cost recovery mechanism, do utilities have an incentive to**
9 **pursue demand-side management strategies that would reduce sales and**
10 **encourage customer conservation?**

11 A: No. In traditional regulation, utilities have an incentive to increase retail sales
12 relative to historical test-year levels that were used for calculating their base rates.
13 The incentive for utilities to maximize the "throughput" of gas sales and
14 transportation volumes in an attempt to increase net margins is referred to as a
15 "throughput incentive". Utility profits are reduced when demand side
16 management and energy efficiency programs reduce sales and transportation
17 volumes from levels that would have been obtained without these programs.
18 Under traditional regulation, there is an incentive for utilities to avoid programs
19 aimed at reducing sales. It is critical to address this throughput incentive and to
20 provide for DSM program cost recovery if the utility is to be actively involved in

1 demand side management and energy efficiency programs that encourage
2 customers to conserve energy, utilize the most efficient appliances and manage
3 their bill

4
5 **Q: Is Columbia Gas's EECR rate schedule still adequate?**

6 A: Yes. The EECR rate schedule still reflects sound ratemaking principles for
7 encouraging Columbia to promote DSM and energy conservation programs; it is
8 fully consistent with provisions set forth in Section 2 of KRS 278.285; and it is
9 consistent with DSM and energy conservation cost recovery mechanisms that have
10 been approved for other gas and electric utilities that pass the Total Resource Cost
11 Test.

12 **Q: Do you recommend any changes to the EECR rate schedule?**

13 A: No.

14
15 **Q: Please describe Columbia Gas's current DSM and energy efficiency programs.**

16 A: Columbia Gas offers three programs targeted to residential customers taking
17 service under Rate Schedule GSR -- (i) High-Efficiency Appliance Rebates, (ii) a
18 Home Energy Audit program, and (iii) a Low-Income High Efficiency Furnace
19 Replacement program. The Energy Audit and the High-Efficiency Furnace Rebate
20 programs are generally available to all customers taking service under Rate

1 Schedule GSR. The Low-Income High Efficiency Furnace Replacement program
2 is only available to residential customers that receive Low Income Home Energy
3 Assistance Program (LIHEAP) funding.

4
5 **Q: Please describe the High-Efficiency Appliance Rebates offered by Columbia**
6 **Gas.**

7 **A:** Under the High-Efficiency Appliance Rebate Program, Columbia Gas currently
8 provides the following rebates for the installation of high-efficiency appliances:
9

Appliance	Efficiency Level	Size	Rebate
Forced Air Furnace	≥ 90%	≥ 30,000 Btu	\$400
Dual Fuel Furnace	≥ 90%	≥ 30,000 Btu	\$300
Space Heater	99%	≥ 10,000 Btu	\$100
Gas Logs	99%	≥ 18,000 Btu	\$100
Gas Fireplace	≥ 90%	≥ 18,000 Btu	\$100
Tank Hot Water Heater	0.62 Energy Factor	≥ 40 gallons	\$200
Power Vent Hot Water Heater	0.62 Energy Factor	≥ 40 gallons	\$250
On Demand Hot Water Heater	0.67 Energy Factor	N/A	\$300

10
11 **Table 1**

12 These rebates incentivize customers to install appliances that are more efficient yet
13 more costly to install than standard appliances. These rebates help off-set the
14 higher installation cost of higher-efficiency alternatives.

1 **Q: Are appliance rebates developed as part of a collaborative process?**

2 A: Yes. Columbia Gas formed a DSM collaborative group to discuss new programs
3 and the modification of existing programs. The implementation of any new rebate
4 would be discussed at a collaborative meeting consisting of community action
5 councils, gas marketers, the Office of the Attorney General, or other interested
6 parties.

7
8 **Q: How much did Columbia Gas spend on High-Efficiency Appliance rebates**
9 **during the most recent program year?**

10 A: For the 12-month period ended December 31, 2017, Columbia Gas spent \$396,224
11 on High-Efficiency Appliance rebates.

12
13 **Q: Do you recommend that Columbia Gas continue to offer these High Efficiency**
14 **Appliance Rebates?**

15 A: Yes.

16
17 **Q: Please describe the Columbia Gas's Energy Audit program.**

18 A: Under the Energy Audit Program, Columbia Gas funds free walk-through energy
19 audits (now also referred to as "check-ups) to residential customers. The audits

1 are performed by a qualified outside contractor selected by the Company. These
2 audits encompass the following services:

- 3 • An analysis of the dwelling's usage history and the detection of any
4 abnormalities or trends relative to the square footage, load and
5 surrounding dwelling usage trends;
- 6 • Checking for proper changes of the heating system filtering devices and
7 clearance from obstructions of all return air registers;
- 8 • Inspection of outer wall switch plates and outlets for insulation protection
9 or gasket installation;
- 10 • Checking of ceiling insulation levels;
- 11 • Inspection of duct systems;
- 12 • Checking of exterior windows and doors for unwanted leakage and heat
13 loss;
- 14 • Identification of areas of high energy loss through thermal imaging;
- 15 • Providing options and recommendations to the occupant;
- 16 • Providing the occupant with an audit kit consisting of caulk, switch plate
17 and outlet gaskets, electric outlet plugs and weather stripping.

18
19 **Q: How does Columbia Gas inform residential customer about the existence and**
20 **benefits of the program?**

1 A: Columbia Gas uses a number of communication channels to inform residential
2 customers about the program, including commercial and public radio notices,
3 online advertisement (e.g. the Weather Channel), Public Television notices,
4 customer in-bill newsletters, the Company's website, magnets on service vehicles,
5 and direct mail. These channels are similar to those used by other utilities in
6 Kentucky.

7
8 **Q: Do you recommend that Columbia Gas continue to offer its Energy Audit**
9 **Program?**

10 A: Yes. Energy audits are important tools for helping customers to conserve energy
11 and customers provide favorable feedback in response to the audits or "Home
12 Energy Check-ups".

13
14 **Q: Please describe the Low-Income High Efficiency Furnace Replacement**
15 **Program.**

16 A: Under the Low-Income High Efficiency Furnace Replacement Program, Columbia
17 Gas currently provides up to \$2,800 toward the cost of installing a high efficiency
18 forced air furnace of 90 percent efficiency or higher for a qualifying low-income
19 customer. Columbia Gas partners with the Community Action Council for
20 Lexington-Fayette, Bourbon, Harrison and Nicholas Counties, Inc ("CAC") to

1 provide this service. The CAC identifies potential customers, qualifies the
2 customers, and works with its contractors to replace existing furnaces with high
3 efficiency forced air furnaces of 90 percent efficiency or higher.

4
5 **Q: Why is the Low-Income High Efficiency Furnace Replacement Program**
6 **important part of Columbia Gas's DSM and energy efficiency program?**

7 A: Low-income customers often live in older homes with older, less efficient furnaces.
8 I have conducted study after study for utilities across the U.S. and have found that
9 customers receiving LIHEAP funding use more gas and electric energy than the
10 average residential usage. One of the reasons for this is that LIHEAP customers
11 often have inefficient appliance stocks. Because people receiving LIHEAP funding
12 are the customers who are typically the least able financially to replace inefficient
13 furnaces, this program fulfills an important need in Columbia Gas's service
14 territory for improving energy efficiency and thus reducing the customer's bill.
15 While the High-Efficiency Appliance Rebate program will incentivize customers
16 who have sufficient financial resources to install more efficient appliances, for low-
17 income customers rebates are simply not enough to encourage the efficient
18 replacement of aging, inefficient furnaces.

19

1 **Q: How much did Columbia Gas spend on its Low-Income Furnace Replacement**
2 **program during the most recent program year?**

3 A: For the 12-month period ended October 31, 2017, Columbia Gas spent \$200,845 on
4 its Low-Income Furnace Replacement program.

5

6 **Q: Do you recommend that Columbia Gas continue to offer its Low-Income**
7 **Furnace Replacement program?**

8 A: Yes.

9

10 **Q: How much is Columbia Gas's total annual budget for its Energy**
11 **Efficiency/Conservation Program?**

12 A: Columbia Gas's total annual budget for all three programs is \$908,000. This annual
13 budget has not changed since the EECR rate schedule was first introduced in
14 November 2009.

15

16 **Q: Have you prepared an exhibit showing the annual expenditures for each**
17 **program since the inception of the Energy Efficiency/Conservation Program?**

18 A: Yes. Exhibit Seelye-3 shows the annual expenditures for each program along with
19 administrative costs. The following table shows the average annual direct cost for
20 each program.

1

Program	Average Annual Direct Expenditure For Program
High-Efficiency Appliance Rebates	\$ 86,659
Home Energy Audit program	\$ 415,436
Low-Income High Efficiency Furnace Replacement	\$ 298,854
Total Direct Expenditures	\$ 800,948

2

3

Table 2

4

5

6 **Q: Is the overall level spent by Columbia Gas on conservation and energy**
7 **efficiency programs reasonable?**

8 **A:** Yes, I would characterize Columbia Gas’s DSM and energy efficiency program as
9 modest yet reasonable. Without introducing programs that provide greater
10 benefits toward reducing the rates of all customers on Columbia Gas’s system, I
11 would not recommend expanding the program.

12

1 Q: Have you prepared an exhibit showing the number of participants for each
2 program since the inception of the Energy Efficiency/Conservation Program?

3 A: Yes. Exhibit Seelye-4 shows the number of participants for each program along
4 with administrative costs. The following table shows the total participants for
5 each program since the EECR rate schedule was implemented in 2009:

Program	Total Participants
High-Efficiency Appliance Rebates	8,336
Home Energy Audit program	2,580
Low-Income High Efficiency Furnace Replacement	970
Total Participants	11,886

6

7

Table 3

8

9 Q: Are the program participants widely dispersed throughout Columbia Gas's
10 service territory?

1 A: Yes. Residential customers in all of Columbia’s service area participated in
2 Columbia Gas’s Energy Efficiency/Conservation Program. Participants by county
3 are shown in Exhibit Seelye-5.

4
5 **Q: Why are Columbia’s DSM and energy conservation programs important to the**
6 **Company and its customers?**

7 A: As previously discussed, Columbia provides three DSM and energy conservation
8 programs: (i) High-Efficiency Appliance Rebates, (ii) a Home Energy Audit
9 program, and (iii) a Low-Income High Efficiency Furnace Replacement program.
10 The High-Efficiency Appliance Rebates and the Low-Income High Efficiency
11 Furnace Replacement program are particularly important to help ensure that
12 Columbia continues to provide gas service for major appliances. The harsh reality
13 for gas utilities is that it has become increasingly more difficult to retain existing
14 customers and to pipe out service to new homes. In September 25, 2014, the U.S.
15 Energy Information Administration (EIA) published a report titled “Everywhere
16 but the Northeast, Fewer Homes Choose Natural Gas as Heating Fuel” which
17 indicated that new customers were showing a preference for electric service over
18 natural gas service. See Exhibit Seelye-6. The report stated that “[p]art of the
19 national change in heating fuel choice can be attributed to population migration
20 farther west and south. But even within Census regions, electricity has been

1 gaining market share at the expense of natural gas.” Columbia is no different
2 from other gas utilities in finding it difficult to encourage builders to install gas
3 appliances and encouraging existing customers to replace old or failing natural
4 gas appliances with *natural gas appliances* rather than with *electric appliances*. For
5 this reason, the rebates provided by the High-Efficiency Appliance Rebates and
6 the Low-Income High Efficiency Furnace Replacement program to install natural
7 gas appliances are of significant strategic importance to Columbia. These
8 incentive programs also benefit participants by encouraging them to install high
9 efficiency appliances and they benefit non-participants by helping to ensure that
10 the utility’s fixed costs are not spread over a smaller and smaller sales volumes
11 because of customers abandoning natural gas in favor of electric service.

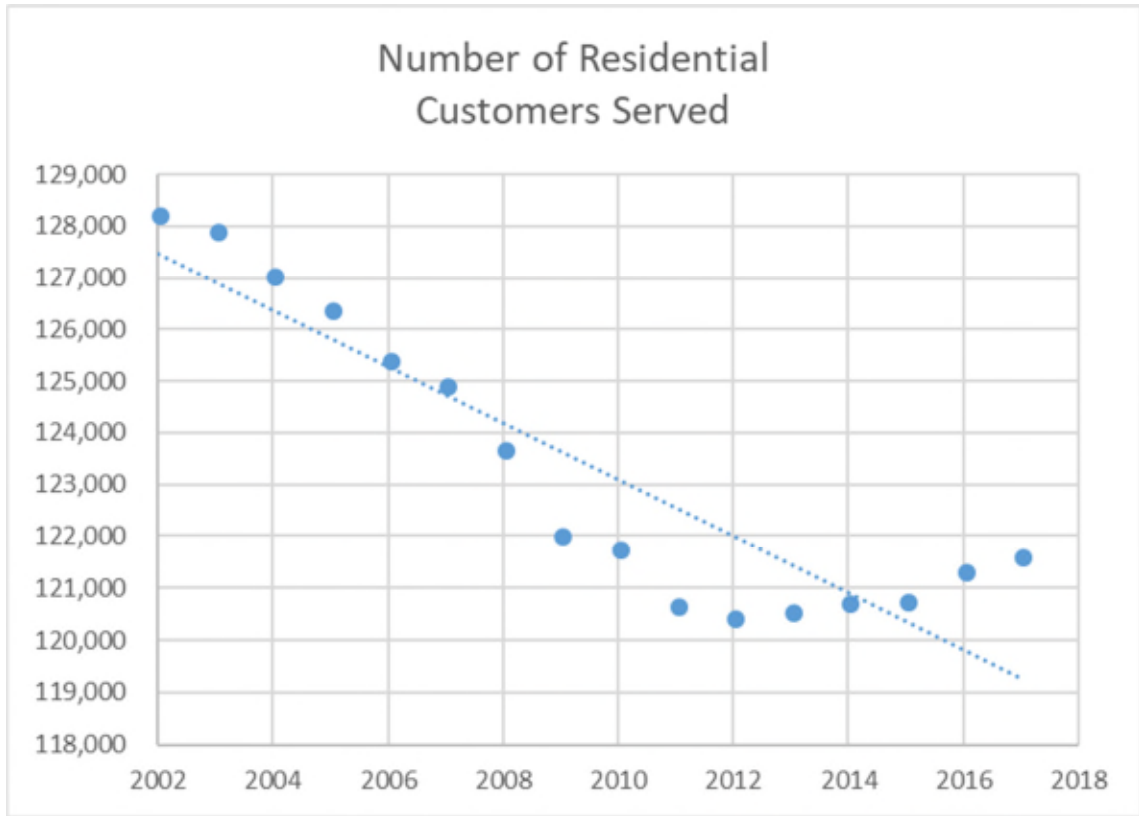
12
13 **Q: Please explain how a gas utility’s rates are affected when they lose appliances**
14 **to electric utilities?**

15 A: A gas utility must install fixed assets to provide service to its customers.
16 Specifically, the utility must install distribution mains, services, and meters to
17 connect new customers. When an existing customer switches its gas water heater
18 or furnace to an electric water heater or furnace, or when a customer leaves
19 Columbia’s system by disconnecting gas service altogether, the fixed costs of the
20 facilities installed to provide service to the customer do not automatically

1 disappear. These fixed costs must be spread to the utility's other customers,
2 thereby putting upward pressure on the utility's rates. Therefore, in terms of the
3 distribution delivery rates that customers pay for gas service, the utility and its
4 customers are better off if the utility can continue to serve gas appliances.
5 Similarly, a utility's fixed costs are spread over a larger customer base (i.e., over
6 more MCF or over more customer-months to which the customer charge is
7 applied) when new customers are added to the system. This is particularly true
8 when customers are added to an existing line extension. During the past couple of
9 decades, Columbia's residential customer base has decreased from 128,241
10 customers as of December 31, 2002 to 121,630 as of December 31, 2017. (Columbia
11 served 119,997 residential customers as of June 30, 2018, but the dip from
12 December 2017 to June 2018 would in part be related to seasonal reductions in
13 customers during the summer months.) The decline in residential customers from
14 2002 to 2017 is demonstrated in the following graph (Graph 1):

15

16



1

2

Graph 1

3

4

This graph illustrates the difficulty that Columbia has faced in retaining existing residential customers and attracting new residential customers. The graph also strongly suggests that Columbia's appliance rebates, which were first implemented in 2009, may have helped quell the steep decline in the number of residential customers that Columbia has seen during the last couple of decades.

9

Columbia firmly believes that its appliance rebate and replacement programs have been key reasons that the decline in residential customers has abated since the implementation of the rebate and replacement programs. Columbia is now

10

11

1 experiencing an increase in the number of residential customers that it serves, in
2 large part, Columbia strongly believes, because its rebate and replacement
3 programs place gas appliances on a more favorable footing in comparison to
4 electric appliances.

5 Obviously, retaining existing customers, retaining gas appliances, and
6 attracting new customers are critically important to a stand-alone gas utility. It is
7 Columbia's position that offering appliance rebates and incentives is important to
8 all three of these objectives. Rebates and replacement programs encourage
9 existing customers to replace their current *gas* appliances with new *gas* appliances
10 rather than with new *electric* appliances when their appliances fail. Incentives
11 encourage customers and contractors building new homes to install *gas* appliances
12 rather than electric appliances that generally have lower up-front installed costs.
13 As mentioned earlier, an impediment to gas appliances being installed in new
14 residential construction is the relatively higher up-front cost of gas appliances in
15 comparison to electric appliances. Ultimately, Columbia and its existing customer
16 base are better off if the Company can retain existing customers and add new
17 customers.

18

1 **Q: Could you provide an example illustrating how offering incentives can benefit**
2 **non-participants by ensuring that lost fixed cost recovery is not spread to other**
3 **customers?**

4 A: Yes. Columbia competes with some East Kentucky Power Cooperative's
5 ("EKPC's") member systems to serve space heating and water heating appliances
6 in critical growth areas outside of the municipal regions served by Kentucky
7 Utilities Company and Kentucky Power Company. (Columbia's service territory
8 overlaps with some EKPC member systems, Kentucky Utilities and Kentucky
9 Power, but the suburban and rural areas served by EKPC represent significant
10 growth areas for Columbia.) When Columbia loses a gas appliance to one of its
11 electric competitors, the fixed cost of Columbia's backbone delivery system must
12 be spread to Columbia's other customers. Columbia believes that its appliance
13 rebate programs have been instrumental in preventing the loss of current and
14 prospective customers. During 2017, Columbia residential customers used on
15 average 62 Mcf of natural gas. If Columbia loses a customer using 62 Mcf to one
16 of EKPC's member systems, then the fixed costs recovered from the customer must
17 be spread to the Columbia's other customers. Specifically, Columbia recovers
18 approximately \$628.48 in fixed annual costs from a residential customer that uses
19 62 Mcf, as shown below:

20

1	Customer Charge	12 Cust-Months @\$16/Mo	= \$192.00
2	Delivery Charge	62 Mcf @ \$7.04	= \$436.48
3	Total Fixed Cost Recovery		= \$628.48

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Therefore, if Columbia were to lose 5,000 customers, as it did from 2002 through 2009 prior to the implementation of its rebate programs (see above), then Columbia would need to collect approximately \$3.1 million in annual revenues from other customers. This corresponds to an annual increase in rates of \$25.31 for each of Columbia’s remaining customers (\$3.1 million ÷ 122,500 customers = \$25.31 per customer.) In contrast, Columbia’s residential customers are currently charged \$0.55 per customer per month for its energy efficiency and conservation programs. This equates to \$6.60 per year. If Columbia’s rebate programs can prevent the loss of customers that it experienced during the 2002 to 2009 timeframe, then Columbia’s existing customers would realize a net annual savings of \$18.71 per customer from the rebate programs.

Q: What are some of the reasons that customers would choose electric appliances over gas appliances even though gas appliances might be less costly in the long run?

1 A: The up-front cost of electric appliances is often lower than for gas appliances, even
2 though high-efficiency gas appliances often perform as well or better than electric
3 appliances. The lower up-front cost of electric appliances provides a strong
4 inducement for builders to install electric appliances over gas appliances. In
5 general, builders will often install lower efficiency appliances instead of high
6 efficiency appliances because of the lower up-front costs. See Lekov et al.,
7 “Economics of Residential Gas Furnaces and Water Heaters in US New
8 Construction Market”, Energy Efficiency(2010) 3:203-222. See Exhibit Seelye-7.
9 Also, residential customers will often opt for lower up-front-cost electric
10 appliances when replacing existing gas appliances. Furthermore, when servicing
11 a water heater that needs replacing, plumbers are more likely to carry electric
12 water heaters in their service trucks than gas water heaters. Rebates will often
13 allow customers to choose what is more cost effective than what is simply more
14 convenient.

15

16 Q: Are the impacts of the cost to participants and non-participants captured in any
17 of the California Tests?

18 A: The Total Resource Cost (“TRC”) Test evaluates the overall cost impact to
19 participants and non-participants.

20

