

May 16, 2016

Mr. Aaron Greenwell  
Acting Executive Director  
Public Service Commission  
Commonwealth of Kentucky  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602

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MAY 16 2016

PUBLIC SERVICE  
COMMISSION

RE: Case No. 2016-00107

Dear Mr. Greenwell

Enclosed for docketing with the Commission is an original and ten (10) copies of Columbia Gas of Kentucky Inc.'s responses to the Commission's Order of May 4, 2016. Should you have any questions about this filing, please contact me at 614-460-4648.

Sincerely,

*Stephen B. Seiple (gmc)*

Stephen B. Seiple  
Assistant General Counsel

Enclosures

cc: Hon. Richard S. Taylor

**COLUMBIA GAS OF KENTUCKY, INC.**  
**RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION**  
**DATED MAY 4, 2016**

1. Provide the California Standard Tests – the Participant Test, the Program Administrator Test, the Ratepayer Impact Measure, and the Total Resource Cost Test individually for the High-Efficiency Appliance Rebate Program, the Home Audit Program, and the Modified Low-Income High Efficiency Furnace Replacement Program, and for Columbia's Demand Side Management program as a whole. If the test results are less than one, explain why Columbia believes the program should be continued.

**Response:**

The *California Standard Practice Manual* defines the Participant Test, the Program Administrator Test, the Ratepayer Impact Measure, and the Total Resource Cost Test as follows:

**The Participant Test:** The Participant Test is the measure of the quantifiable benefits and costs to the customer due to participation in a program.

**The Program Administrator Cost Test:** The Program Administrator Cost Test measures the net costs of a demand-side management program as a resource option based on the costs incurred by the program administrator (including incentive costs) and excluding any net costs incurred by the participant. The benefits are similar to the Total Resource Cost Test benefits.

**The Ratepayer Impact Measurement Test:** The Ratepayer Impact Measure (RIM) test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. Rates will go down if the change in revenues from the program is greater than the change in utility costs. Conversely, rates or bills will go up if revenues collected after program implementations are less than the total costs incurred by the utility in implementing the program. This test indicates the direction and magnitude of the expected change in customer bills or rate levels.

**The Total Resource Cost Test:** The Total Resource Cost Test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. This test represents the combination of the effects of a program on both the customers participating and those not participating in a program. In a sense, it is the summation of the benefit and cost terms in the Participant and the Ratepayer Impact Measure tests, where the revenue (bill) change and the incentive terms intuitively cancel (except for the differences in net and gross savings).

The results of the Program Administrator Test, the Ratepayer Impact Measure, and the Total Resource Cost Test for the High-Efficiency Appliance Rebate Program and the Modified Low-Income High Efficiency Furnace Replacement Program will vary depending on the assumptions made regarding the extent to which the programs will induce customers not to switch to alternative sources of energy, such as electric energy for space heating. If it is assumed that a percentage of customers would have switched to an alternative energy source in the absence of the programs, then the impact of such effects should be considered in the analysis.

In the attached summaries, the standard tests were performed based on three sets of assumptions. In the first analysis, it is assumed that 2% of the customers receiving benefits under the High-Efficiency Appliance Rebate Program and the Modified Low-Income High Efficiency Furnace Replacement Program would have switched to an alternative energy source had the programs not been in effect over the analysis period. In the second analysis, it is assumed that 1% of the customers would have switched to an alternative energy source had the programs not been in effect over the analysis period. In the third analysis, it is assumed that none of the customers would have switched to an alternative energy sources had the programs not been in effect over the analysis period. The benefit/cost ratios for all three scenarios were calculated over a 20-year analysis period.

The Participant Test is greater than 1.0 for all programs. The Rate Impact Measure is less than 1.0 for all programs and for each of the three scenarios (or assumptions) regarding switching to alternative energy sources. It is Columbia's position that the programs should be continued despite the Rate Impact Measure being less than 1.0.

The Energy Audit Program and the High-Efficiency Appliance Rebate Program are available to all customers in Columbia's service territory. Therefore, these programs do not create subsidies from one type or class of customers to another.

At some point in the useful lives of their appliances or of their homes, all customers on Columbia's system could take advantage of these programs. Although the Modified Low-Income High Efficiency Furnace Replacement Program is only available to low-income customers (i.e., customer receiving LIHEAP funding), this program fulfills an important need in the communities served by Columbia. Because people receiving LIHEAP funding are typically the customers least able to replace their inefficient furnaces, this program makes it possible for those customers who cannot otherwise afford it to improve the energy efficiency of their appliances.

All of the programs create environmental and societal benefits by incentivizing customers to use energy more efficiently and to preserve a finite resource. The spending for each program is modest, and Columbia is not proposing to expand any of them at this time.

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2. For the High-Efficiency Appliance Rebate Program provide:
- a. The original estimate of the annual number of participants.
  - b. The original estimate of the cost per participant.
  - c. The actual annual number of participants and average cost per participant for each year of the program.
  - d. Discuss the differences between the original estimates and the actual annual participants and average costs per participant and explain any significant differences.

**Response:**

- a. See attached.
- b. See attached.
- c. See attached.
- d. The difference in the number of participants between the original estimates and the actual numbers is largely a result of varying levels of interest in the rebate

program from year to year on the part of customers. The difference in the average cost per participant is a result of greater participation in rebates for furnaces than for other appliances. Columbia generally provides higher rebates for furnaces than for tank hot water heaters, gas fireplaces and other gas appliances.

## Columbia Gas of Kentucky, Inc.

## Program Participation in High-Efficiency Rebate Program

Program Period Year End	Original Estimate of Annual Number of Participants	Original Estimate of Cost per Participant	Actual Number of Participants	Actual Cost per Participant
Oct-10	1,460	\$ 274	0	\$ -
Oct-11	1,460	274	1429	431.18
Oct-12	1,460	274	1138	389.14
Oct-13	1,460	274	1194	371.09
Oct-14	1,460	274	1248	399.56
Oct-15	1,460	274	1179	383.15



**COLUMBIA GAS OF KENTUCKY, INC.**  
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3. For the Home Energy Audit Program provide:

- a. The original estimate of the annual number of participants.
- b. The original estimate of the cost per participant.
- c. The actual annual number of participants and average cost per participant for each year of the program.
- d. Discuss the differences between the original estimates and the actual annual participants and average costs per participant and explain any significant differences.

**Response:**

- a. See attached.
- b. See attached.
- c. See attached.
- d. In the original filing of the DSM programs in Case No. 2009-00141, the cost of the audits was underestimated and the number of audits was overestimated. The

estimates were revised in 2010 to better reflect the actual cost of a contractor to perform the home audit or energy check up. There are also variations in consumer interest in the audits from year to year resulting in differences in the number of audits performed annually. A higher relative number of audits were performed in 2013 largely because of increased advertisement of the Home Energy Audit Program that year.

<b>Columbia Gas of Kentucky, Inc.</b>				
<b>Program Participation in Energy Audit Program</b>				
<b>Program Period Year End</b>	<b>Original Estimate of Annual Number of Participants</b>	<b>Original Estimate of Cost per Participant</b>	<b>Actual Number of Participants</b>	<b>Actual Cost per Participant</b>
Oct-10	4,000	\$ 150	183	290.65
Oct-11	4,000	150	277	618.24
Oct-12	1,000	150	158	189.55
Oct-13	1,000	150	1,399	216.04
Oct-14	1,000	150	252	159.75
Oct-15	1,000	150	116	277.49

**COLUMBIA GAS OF KENTUCKY, INC.**  
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4. For the Low-Income High Efficiency Furnace Replacement Program provide:
- a. The original estimate of the annual number of participants.
  - b. The original estimate of the cost per participant.
  - c. The actual annual number of participants and average cost per participant for each year of the program.
  - d. Discuss the differences between the original estimates and the actual annual participants and average costs per participant and explain any significant differences.

**Response:**

- a. See attached.
- b. See attached.
- c. See attached.

d. The difference in the number of participants between the original estimates and the actual numbers is largely a result of varying levels of interest in the rebate program from year to year on the part of customers.

**Columbia Gas of Kentucky, Inc.**

## Program Participation in Low-Income High Efficiency Furnace Replacement Program

Program Period Year End	Original Estimate of Annual Number of Participants	Original Estimate of Cost per Participant	Actual Number of Participants	Actual Cost per Participant
Oct-10	140	\$ 2,200	24	2,426.92
Oct-11	140	2,200	91	2,151.66
Oct-12	140	2,200	160	1,852.63
Oct-13	140	2,200	264	2,670.23
Oct-14	140	2,200	198	2,682.68
Oct-15	140	2,200	98	2,578.01