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BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of Demand Side Management Programs for its Residential and Commercial Customers and the Application for Approval to Change Accounting Methods	) ) ) ) ) ) )	5028 Case No. 11-__-GA-UNC 5029 Case No. 11-__-GA- AAM ✓
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APPLICATION OF COLUMBIA GAS OF OHIO, INC.  
TO CONTINUE AND EXPAND  
DEMAND SIDE MANAGEMENT PROGRAMS FOR RESIDENTIAL AND COMMERCIAL CUSTOMERS AND FOR  
APPROVAL OF A CHANGE IN ACCOUNTING METHODS

1. Introduction

In this application, Columbia Gas of Ohio, Inc. ("Columbia") seeks approval to continue and to expand its Demand Side Management ("DSM") program approved by the Public Utilities Commission of Ohio ("Commission") in Case No. 08-833-GA-UNC. Specifically, Columbia seeks approval for the proposed DSM programs described herein. Columbia has been a leader among Ohio utilities in the development of innovative energy efficiency and weatherization programs. Columbia seeks to continue this leadership with an expanded DSM portfolio. Columbia proposes to spend approximately \$20 million annually on the proposed programs which will be effective for residential and commercial customers for calendar years 2012 through 2016.<sup>1</sup> Columbia has shared the costs, savings and a description of the proposed programs with Columbia's Demand Side Management Stakeholder Group ("DSMSG") which has expressed support for the programs proposed herein.

Columbia currently recovers the costs of its DSM programs through Columbia's Rider DSM. Under current procedures approved by the Commission in Case No. 08-0072-GA-AIR *et al.*, Columbia's Rider DSM is adjusted effective May each year to enable Columbia to recover the DSM costs incurred during the prior calendar year. As part of this Application, Columbia seeks to revise this cost recovery procedure.

<sup>1</sup> This number will increase annually by approximately 3% to account for inflation and natural growth in successful programs.

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In November 2011 Columbia will file a Notice of Intent for its next Rider DSM adjustment, followed by an application in February 2012. Commission action upon the February 2012 application will establish a new Rider DSM rate to become effective in May 2012. Thereafter, Columbia proposes to maintain the Rider DSM rate established in May 2012 for the duration of the DSM program, or until all costs have been fully recovered. As more fully described in Section 4 of this Application, Columbia requests authority to defer the difference between costs recovered through Rider DSM and the actual costs of implementing the proposed programs. This will enable Columbia to continue its robust DSM programs while relieving the Commission Staff and other parties of the burden of an annual review of the Rider DSM rate adjustments. Columbia will, however, continue to keep the DSMSG fully engaged as the programs progress.

## **2. History of Columbia's DSM Programs**

Beginning with Operation HomeCheck, Columbia has been a leader among Ohio utilities in developing energy efficiency and weatherization programs over the past three decades. Established in 1984, Operation HomeCheck represented Columbia's first partnership with community-based, non-profit organizations and provided low-income customers with energy audits of their homes. Operation HomeCheck developed the capacity to perform more than 11,000 home energy audits annually. Columbia and its partners further developed this program in 1986 by adding a low-cost weatherization component to the energy audit service through its Columbia Gas of Ohio Weatherization Program, which provided both an educational and material installation service for eligible customers.

Columbia continued its weatherization efforts with the creation of WarmChoice® in 1987. WarmChoice is Columbia's whole-house weatherization program for eligible, low-income customers. The goal of the program is to provide eligible customers with a complete set of weatherization measures, helping residents manage their energy use, and consequently, save on utility bills. Additionally, the program focuses on health and safety to help ensure that low-income residents within Columbia's service territory are insulated from the dangers of antiquated, unsafe heating equipment despite income limitations.

At no cost to the customer, WarmChoice services include diagnostic home energy inspections, safety checks on gas appliances, space and water heating system repairs and/or replacement if needed, furnace replacement, attic, wall and floor insulation, and sealing of major duct and air leakage sites. Since its inception in 1987, WarmChoice has served over 54,000 households. In order to achieve

these results, Columbia contracts with four community-based organizations to manage and operate the program.

## **2.1. 2009-2011 DSM Program**

Columbia expanded its weatherization efforts with its DSM Pilot Program. On January 23, 2008, the Commission issued an Opinion and Order in Case No. 05-221-GA-GCR, *et al.*, adopting the December 28, 2007 Joint Stipulation and Recommendation ("Stipulation"). Pursuant to the stipulation, the parties agreed that Columbia would file by July 1, 2008 a DSM application, cooperatively developed by Columbia, the OCC, Staff and other stakeholders for approval of comprehensive energy efficiency programs for residential and commercial customers. The Stipulation allowed a program funding increase of \$1 million in 2010 and 2011, provided energy efficiency targets were met.

On July 3, 2008, Columbia filed an application in Case No. 08-833-GA-UNC requesting approval of a Demand Side Management Program for residential and commercial customers. In partnership with the DSMSG, Columbia developed an innovative and comprehensive portfolio of energy efficiency programs. While some of the programs proved more successful than others, Columbia created one of the most diverse, innovative and successful DSM portfolios in the utility industry. Columbia strives to maintain that momentum beyond 2011 with the continuation and expansion of its DSM program as described herein.

Perhaps the most popular and robust of Columbia's new DSM Programs has been the Home Performance Solutions ("HPS") program. HPS provides low-cost diagnostic energy audits and rebates to customers to help offset the cost of energy efficiency improvements. The improvements with the highest penetration rates are insulation and air sealing, which are also the two measures that deliver the most energy savings in many existing homes. Columbia has received positive feedback from customers who have had the audit, and the popularity of the program continues to grow as more and more customers request an audit and take advantage of rebates. Currently, the HPS program has a waiting list for audits and services for 2012. By the end of the program, Columbia anticipates exceeding its original three-year energy audit goal by nearly 100%. Columbia has also worked with American Electric Power ("AEP") on a pilot program to integrate each company's energy efficiency improvement rebates into their respective residential energy audit/rebate programs.

Columbia also established its Simple Energy Solutions program. This program provides a \$10 rebate for energy efficient showerheads and a \$25 rebate for programmable thermostats. Columbia has processed a total of 16,471 rebates for energy efficient showerheads and programmable thermostats to date.

The Furnace Market Research project was also developed as part of Columbia's pilot DSM program. This project was designed to identify the market share of efficient furnaces in different market segments and to help identify opportunities for potential DSM program designs. Columbia hired Navigant Consulting to conduct research on the viability of a high efficiency furnace rebate program in 2012. This research identified specific target markets that lag in the installation of high efficiency heating equipment.

Columbia partnered with AEP to jointly offer an Energy Star® New Homes program as part of its New Home Solutions program. This partnership allows both utilities to streamline the process in order to promote the construction of more energy efficient homes. To date, 936 energy efficient new homes have been registered in the program.

Columbia also implemented its Ohio Small Business Energy Saver program, Energy Design Solutions program and Innovative Energy Solutions program. The Ohio Small Business Energy Saver program provided on-line energy audits to commercial customers through a collaboration with the Ohio Department of Development and other investor-owned utilities. Demand for the service has declined in the last year, and the program is scheduled to end at the end of 2011. Through its Energy Design Solutions program, Columbia provided continuing education seminars on how to exceed the minimum commercial building energy efficiency code to over 200 building design professionals, including architects and engineers. The Innovative Energy Solutions program provides rebates to commercial customers for energy audits and energy conservation measures. Currently, the program has over ten projects in progress.

### **3. Columbia's Proposed 2012-2016 DSM Plan**

Columbia believes it is in the best interest of its residential and small commercial consumers of natural gas services to continue to provide DSM services through programs that promote the installation and implementation of energy efficiency measures and technologies in a cost-effective manner. Columbia has approximately 1.3 million residential customers and 70,000 commercial customers on its Small General Service rate schedule. For many of these customers, the energy efficiency market has several existing barriers to the adoption of efficient technology, including higher incremental costs for high efficiency equipment, lack of consumer education, lack of contractor trade ally training, lack of monetary resources, fear of change, and societal costs not being reflected in prices. Accordingly, Columbia and the DSMMSG believe that Columbia needs to continue to play a role in promoting and encouraging energy efficiency.

Specifically, Columbia must continue to take a lead role in promoting energy efficiency because it has an existing relationship with consumers, who often view the utility as their primary source of energy information. Columbia's unique relationship with consumers and stakeholders will allow Columbia to continue to meet consumers' needs for DSM services through technology, education and incentives to help remove market barriers and speed the adoption of more efficient technologies. Other stakeholders that help make up the DSMSG, which includes consumer advocate groups, contractors, trade allies and numerous energy-related organizations, are also an integral part of creating a successful program as these groups interact with the utility and its customers.

Residential and small commercial customers will benefit from these proposed energy efficiency programs by providing ready access to energy saving measures that will directly reduce natural gas usage throughout the calendar year improving the affordability of natural gas service. Additionally, customers will benefit by gaining better safety and reliability of their heating equipment, overall efficiency and comfort and electric and water savings.

Non-participating customers will also benefit through the establishment of a network of trained providers and enhanced marketplace with better access and availability to state of the art energy conservation techniques promoted by these DSM programs. Moreover, non-participating customers may benefit from the price dampening effects of energy efficiency and from the positive environmental impacts of the programs.

### **3.1. Summary of Programs**

Columbia is proposing to continue and expand its implementation of a portfolio of DSM programs that offer a wide range of services to its residential customers and commercial customers. In addition to the energy savings that DSM programs provide to customers, the programs create jobs and economic development in Ohio through direct hiring of personnel and through the purchase of tools, equipment, products and services. Other "non-energy" benefits include improved comfort and safety, and more durable, healthier and affordable homes. While Columbia will continue to administer its DSM portfolio, program implementation services will be provided primarily by third party vendors. Columbia's DSM portfolio is comprised of two program areas: residential and commercial customer programs. Columbia proposes to offer these programs beginning January 1, 2012 through December 31, 2016. Columbia has also proposed budgets for each program based on estimates of likely participation rates and activity within each program.

Columbia proposes to both continue and expand its highly successful Home Performance Solutions program that provides low-cost, computerized and diagnostic energy audits and specific energy conservation measure incentives to residential customers above 150% of the federal poverty guidelines ("FPG"). This program was expected to serve 6,039 customers from 2009-2011, but is now projected to provide audits to 11,766 residential customers during this same time period. For the five year period 2012-2016, the program will provide approximately 6,000 energy audits annually.

In addition to working with the program's pre-qualified insulation contractors, the program will also continue to build the relationship with its pre-qualified HVAC contractor network to identify customers who are replacing their furnaces and who may need additional attic and wall insulation and instrumented air sealing. Incentives will continue to be offered to program participants to install program-eligible measures, and higher levels of incentives will continue to be offered to customers who install more than one major energy conservation measure. Customers who are over the 150% FPG level, but are at or below 80% of the Area Median Income (USHUD's definition of low income) and senior citizens with incomes at or below Area Median Income, will be eligible to have approximately 90% of the cost of attic and wall insulation and instrumented air sealing paid for by the program.

The residential programs include the expansion of Columbia's highly successful WarmChoice program. WarmChoice provides whole house weatherization services to low-income customers at or below 150% of the federal poverty guidelines. Based on the state of the economy and potential declines in both federal weatherization and home energy assistance programs, Columbia proposes to increase WarmChoice funding by approximately \$5 million in 2012, increasing to approximately \$6.5 million in 2016. This funding will enable the WarmChoice program to serve approximately 1,000 customers more per year in addition to the current service level of approximately 1,600 customers per year.

With the expiration of builder tax incentives for energy efficient new homes in 2009 and the sharp downturn in the economy, pressure has been and remains on new home builders to manage and even reduce new home construction costs. This pressure could have resulted in builders exiting EPA's Energy Star qualified new homes program, which continues to ramp up its energy performance criteria well above code minimums. Instead, Columbia's Energy Efficient New Homes program, which offers incentives to home builders to continue to build homes that exceed code minimum levels, has helped to maintain strong participation by builders in the energy efficient home market.

Columbia's Energy Efficient New Homes program has resulted in the retention of thirty-one builders in the Energy Star program, twelve new participat-

ing homebuilders, and commitments from eight market-rate and eleven affordable housing homebuilders to meet Energy Star version 3.0. Columbia proposes to continue this program to include both Energy Star New Homes, and homes built to a Home Energy Rating Scale (HERS) level of 80 or lower. Modifying the performance level of energy efficient new homes using the HERS scale ensures that the homes built to program standards will always exceed code-minimum levels. Columbia will also maintain its partnership with AEP in jointly served counties to match incentives to achieve high levels of energy efficiency in new homes. The program will also provide builders and home energy raters with training and technical assistance.

Columbia will expand its Simple Energy Solutions program and will offer rebates to install approximately 15,000 programmable thermostats, energy efficient showerheads and faucet aerators per year. Products will be available online and/or at local hardware or building supply stores. Eligibility to participate in this program is extended to all customers regardless of income. The program will also include a direct install component for some customers.

Columbia proposes to add five new residential DSM programs, including Home Energy Reports, High Efficiency Heating System rebates, Energy Education for Students, On-line Energy Audits, and Energy Code Training and Evaluation.

The Behavioral Modification/Home Energy Report program will engage at least 100,000 customers per year with information on how to reduce their energy use. This is done by comparing the participant's energy use with others, and then using peer pressure, social norms and potentially other incentives to encourage customers to take action to reduce their usage. This program approach has proven successful for other utilities in obtaining large energy savings and engaging many customers with only a modest investment.

Based on results of independent research conducted in 2010-2011 by Navigant as part of Columbia's DSM portfolio, Columbia proposes a High Efficiency Heating System rebate program. The research showed that high efficiency heating system technology has lower penetration rates in the rental property market and certain counties within Columbia's service territory. The proposed program will provide \$300 to \$400 rebates to landlords and customers in low market penetration areas to encourage the installation of high-efficiency furnaces and boilers.

The Energy Efficiency Education for Students program will provide teachers and students in grades 5 through 12 with energy education materials as a formal part of the school's science curriculum, culminating with a kit of energy conservation materials that is provided to students to install at their home. Columbia will provide this program to up to 18,000 students per year and will partner with AEP on the project in some areas where both utilities offer services.

Columbia will provide its customers with an On-line Energy Audit to enable customers to evaluate their own home and be linked to DSM programs that can provide them with opportunities to reduce their natural gas usage based on their energy usage level. This program will be a good alternative for lower use customers who might otherwise pay for a whole house audit that may not be a cost-effective use of resources.

Columbia also proposes to provide Residential Energy Code Training, possibly in collaboration with other utilities, to homebuilders and code officials, including blower door use training that is proposed as part of the Ohio residential building code. Additionally, Columbia will work with the Ohio Board of Building Standards to measure actual energy usage of homes built to state energy codes standards.

Columbia will continue its Innovative Energy Solutions program that provides rebates for energy audits and energy conservation measures for commercial customers. Building commissioning and re-commissioning services will also be eligible for rebates. This program will also use a review panel to help rate some proposals for competitive matching grants. Custom energy conservation measures for larger buildings will be determined through energy audits or other appropriate energy use reduction estimation methods. For commercial customers with usage levels less than 300 Mcf/year, the program will also integrate prescriptive rebates for certain standard energy conservation measures that will not need review panel approval.

In order to move the commercial building market forward, Columbia proposes to continue its Energy Design Solutions program, an education program based on the American Society of Heating, Refrigeration and Air Conditioning Engineers ("ASHRAE") Advanced Energy Design Guides. Educational seminars will be provided to architects, engineers, building developers and owners to help them understand the opportunities beyond first costs<sup>2</sup> to life-cycle costs<sup>3</sup> and energy use of commercial facilities over their life spans as energy prices continue to increase. In addition, Columbia proposes that building science education be a part of the training program. The program will also provide some individualized project consulting to find energy efficiency opportunities in projects that are proposed to be built, but which may have been designed to code minimum energy efficiency levels.

Columbia will also promote the use of the US Environmental Protection Agency's Portfolio Manager, an interactive energy management tool that allows building owners to track and assess energy and water consumption in a secure

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<sup>2</sup> First costs are generally defined as the costs to construct a facility and do not include long term operations and maintenance costs.

<sup>3</sup> Life cycle costs include the costs for operating and maintaining a facility over its useful life.



on-line environment. Portfolio Manager can help building owners set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.

### **3.2. Methodology for Choosing New DSM Programs**

Columbia worked with a DSM consultant, M. Blasnik and Associates, to calculate the potential savings from energy conservation measure technologies and products applied across proposed customer participation rates for each DSM program. Program budgets were proposed to implement the program designs, and cost-effectiveness tests were applied to each of the programs. Pursuant to the Stipulation in Case Nos. 05-221-GA-GCR et al, the DSM programs must be cost-effective as measured by the Total Resource Cost Test ("TRC"), or other industry accepted measurement techniques as determined by the DSMSG, such as the Utility Cost Test ("UCT"), the Participant Cost Test ("PCT") or the Ratepayer Impact Test ("RIM"). All four of the standard test methodologies from the California Standard Practice manual were applied to the proposed DSM programs.

TRC 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.

UCT (also referred to as 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 TRC benefits, although costs are more narrowly defined under UCT.

PCT is the measure of the quantifiable benefits and costs to the customer due to participation in a program. Since many customers do not base their decision to participate in a program entirely on quantifiable variables, this test cannot be a complete measure of the benefits and costs of a program to a customer. Thus, PCT is not a complete measure of the benefits and costs of a program to a customer.

RIM, also referred to as the Non-Participants 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 implementation of the program are less than the total costs incurred by the utility to implement the program. RIM indicates the direction and magnitude of the expected change in customer bills or rate levels.

All of the proposed programs described herein pass TRC, UCT and PCT with the exception of the Innovative Energy Solutions program and those programs that are purely educational in nature. The cost-effectiveness of the Innovative Energy Solutions program will be determined through energy audits and other monitoring, verification and evaluation protocols ("M, V and E") before and/or after implementation.

Non-energy benefits were not included in the cost-effectiveness calculations. With the potential monetization of carbon dioxide and other greenhouse gas ("GHG") emissions, the emissions reductions associated with the reduced use of natural gas (and electricity) that occur from implementing DSM programs would likely improve program cost-effectiveness. For instance, at \$2 per ton for carbon, Columbia DSM program CO2 reductions of nearly 1.6 million tons over the life of the energy conservation measures could be worth approximately \$3.2 million.

### **3.3. Program Recommendations**

Energy cost-effectiveness tests based on gas savings and budget projections were calculated using M. Blasnik and Associates'. Sources for costs of energy conservation measures included impact evaluation studies, engineering calculations and industry sources. Based upon the results of the Consultant's work and discussions with the DSMSG, Columbia proposes that the following DSM programs be continued, expanded or added. A full description of each program is contained in **Appendix A**.

#### Residential Programs

- Home Performance Solutions
- Energy Efficient New Homes
- Simple Energy Solutions
- High Efficiency Heating System Rebates
- Behavior Modification/Home Energy Reports
- On-Line Energy Audit
- WarmChoice
- Energy Efficiency Education for Students
- Residential Code Training

### Commercial Programs

- Innovative Energy Solutions
- Energy Design Solutions
- EPA Portfolio Manager<sup>4</sup>

### **Stakeholder Process**

Columbia met with its DSM Stakeholder Group in 2010 and 2011. At these meetings, the DSMSG discussed DSM program performance and twice worked with Columbia to reallocate funding between programs in order to meet consumer demand. At its May 20, 2011 stakeholder group meeting, Columbia informed the stakeholder group that it was working on its next DSM plan, and that it would provide details of the program plan at its next meeting. On August 16, 2011, Columbia presented its proposed 2012-2016 DSM program plan and asked for feedback from the DSM Stakeholder Group. The DSM Stakeholder Group supports this filing.

### **3.4. Evaluation**

Columbia has a long history of conducting program evaluations to determine how its energy efficiency programs are performing and how they might be improved. Columbia will continue to use multiple strategies to evaluate the effectiveness of the proposed DSM programs, including continuous tracking of, and feedback on, contractor program metrics, and independent impact and process evaluations.

Annual, interim impact evaluation reports will be prepared based on conservative energy engineering estimates of gas usage reductions using customer participation and energy conservation measure penetration rates. Columbia will also utilize weather-normalized, billing analysis-based impact evaluation processes based upon an improved alternate approach to the Princeton Scorekeeping Method ("PRISM"). This analysis will help determine the savings from programs by comparing participant and equivalent non-participant (control group) changes in natural gas use. This information will be used to help determine the realization rate of the energy engineering estimates and will provide feedback into program design, implementation and quality assurance procedures. PRISM-type evaluations lag program years due to the preference of obtaining twelve months of actual meter readings for pre- and post-treatment periods.

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<sup>4</sup> The Energy Design Solutions program is a low cost educational program for which energy savings are not projected, but which could occur.

Using actual metered billing data can provide additional accuracy in impact evaluation results and can improve estimates of program impacts. These results can then be compared with secondary econometric models as a cross check of the savings results.

In addition to independent evaluations, Columbia will provide quality assurance, technical assistance and training as part of its administration of the programs where applicable. In addition to quality assurance conducted by program implementers, Columbia will evaluate work completed by contractors for quality assurance purposes. Customer satisfaction surveys will also be implemented as part of some program implementation and evaluation processes. Training and orientation of contractors to enable them to succeed will be conducted on program standards and acceptable installation methods. This will be the primary up front strategy to ensure that quality work is performed for customers. Progressive and corrective improvement processes that contemplate non-compliant work will be established on a program by program basis.

The program evaluation process includes interim engineering estimates of savings, billing analysis and process evaluations. For residential programs that provide installed energy conservation measures, each program will conduct an annual interim evaluation of estimated energy savings based on planning assumptions as well as other known resources, including the TRM, within three to six months of the end of the program year. Each program will also have a billing analysis based evaluation conducted within 13-16 months of the end of the program year. These programs will also have process evaluations conducted at the end of years two and four for existing programs, with reports due within six months of the end of the program year, and at the end of years one and three for new programs, with reports due within 6 months of the end of the program year.

For the Behavior Modification/Home Energy Report program, billing analysis based evaluations will be conducted continuously for program years one and two, with a year-end composite report of savings, to determine whether the program approach is cost effective and should be continued. A process evaluation will be conducted at the end of year one.

Impacts from the Innovative Energy Solutions program will be determined from energy audit or TRM projections of savings, or from billing analysis or the International Performance Measurement and Verification Protocol.

### **3.5. Shared Savings**

Columbia notes that many industry leading organizations have recognized the important role incentives play in creating long term success within DSM programs at the utility level. For example, the National Action Plan for En-

ergy Efficiency recognizes that “simply eliminating financial penalties will not fundamentally change the utility business model, because that model is premised on the earnings produced by supply-side investment;” and that “providing financial incentives to a utility if it performs well in delivering energy efficiency potential can change the existing business model by making efficiency profitable, rather than merely a break-even activity.”<sup>5</sup>

In addition, one proponent of energy efficiency, the American Council for an Energy Efficient Economy (“ACEEE”), suggests that “enacting these regulatory mechanisms have generally been very positive, with utilities or other program providers governed by such mechanisms often demonstrating strong commitments to meet or exceed established goals for energy efficiency programs.”<sup>6</sup> The Alliance to Save Energy (“ASE”)<sup>7</sup> embraced the American Gas Association (“AGA”) and Natural Resources Defense Council (“NRDC”) May 22, 2008 joint statement which “maintains support for revenue decoupling, but goes one step further with advocacy for performance-based mechanisms which provide economic incentives for utilities to promote energy efficiency [...] [t]he concept of earnings opportunities linked to energy efficiency is at an early stage; however the end result should be a win-win solution for natural gas utilities and their customers.”<sup>8</sup>

In order to encourage Columbia to continue to invest in DSM while still being prudent with shareholders dollars, Columbia is proposing to create a shared savings incentive for its DSM programs. Columbia’s proposal is a significant expansion of its DSM programs, and Columbia maintains responsibility for implementing its DSM portfolio and programs in a cost-effective manner. Columbia believes that a modest shared savings incentive ranging from 5% to 8.5% of program net benefits is appropriate to incentivize the company to expand and fully implement the DSM programs.

The proposed shared savings mechanism is based on Columbia earning a share of the net benefits as calculated under the Utility Cost Test (“UCT”). The UCT is similar to the Total Resource Cost Test (“TRC”), but includes utility spending on incentives while excluding customer costs. The UCT shows im-

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<sup>5</sup> Environmental Protection Agency, *Aligning Utility Incentives with Investment in Energy Efficiency: A Resource of the National Action Plan for Energy Efficiency*, section 2.4, pages 2-7, 2-8, available at <http://www.epa.gov/cleanenergy/documents/incentives.pdf>.

<sup>6</sup> *Aligning Utility Interests with Energy Efficiency Objectives: A Review of Recent Efforts at Decoupling and Performance Incentives*, Report Number U061, October 2006.

<sup>7</sup> The Alliance to Save Energy, *Alliance Endorses AGA, NRDC Joint Statement Supporting Utility Incentives to Promote Energy Efficiency*, May 22, 2008, available at <http://www.ase.org/content/news/detail/4712>.

<sup>8</sup> American Gas Association, *Combating Global Warming with Increased Energy Efficiency Is a Win-Win Says AGA, NRDC*, May 22, 2008 available at <http://www.aga.org/Newsroom/news+releases/2008/CombatingGlobalWarming.htm>.

provement if a program can produce the same results with fewer participant incentives or lower operating costs. By ignoring participant spending, the UCT also avoids the problem of non-energy benefits that may influence customer purchases. If some customers value being more energy efficient as part of an environmental commitment, customers should be free to spend their money on those improvements without making the utility program appear less cost-effective. A similar situation can arise for customers who want to address problems with comfort, moisture or air quality in their homes or buildings that may be resolved through DSM programs. The UCT is also simpler to evaluate since the costs are all accounting items from the utility and does not require customer spending information.

Shared savings are computed on the difference between the net present value of program lifetime energy savings, determined from the same process used to create the values in Appendix B, Exhibit 2, minus the net present value of the program costs calculated from the Utility Cost Test. The energy estimates of savings are calculated using the formulas identified in the State of Ohio Energy Efficiency Technical Reference Manual, except where historic billing analyses provide well-documented savings of program performance. The recovery of the shared savings incentive will be based on the following tiered levels of program achievement:

1. No shared savings are earned for a program that does not meet 75% of the program impacts at its prorated budgeted cost level.
2. 5% of the savings is earned once the program meets 75% of the projected program impacts at its prorated budgeted cost level up to 85% of budgeted expenditures.
3. 5.5% of the savings is earned once the program meets 80% of the projected program impacts at its prorated budgeted cost level up to 90% of budgeted expenditures.
4. 6% of the savings is earned once the program meets 85% of the projected program impacts at its prorated budgeted cost level up to 95% of budgeted expenditures.
5. 6.5% of the savings is earned once the program meets 90% of the projected program impacts at its prorated budgeted cost level.
6. 7% of the savings is earned once the program meets 95% of the projected program impacts at its prorated budgeted cost level.
7. 7.5% of the savings is earned once the program meets 100% of the projected program impacts at its prorated budgeted cost level.
8. 8.0% of the savings is earned once the program meets 105% of the projected program impacts at its prorated budgeted cost level.
9. 8.5% of the savings is earned once the program meets 110% of the

projected program impacts at its prorated budgeted cost level.

The shared savings are the equivalent of a return of approximately 1% to 3% on the investment. The shared savings approach provides Columbia incentives for properly managing the programs and for meeting the ambitious program participation and impact goals.

#### **4. Recovery of Costs Related to DSM**

Consistent with SFAS 71-Accounting for the Effects of Certain Types of Regulation, Columbia seeks authority to revise its accounting treatment to provide for the deferral of DSM program expenses resulting from the expansion and continuation of the programs approved by the Commission in Case No. 08-833-GA-UNC as described herein. Columbia also requests modification of its recovery mechanism approved by the Commission in Case No. 08-0072-GA-AIR.

Section 4905.13 Ohio Revised Code, authorizes the Commission to establish systems of accounts to be kept by the public utilities of Ohio and to prescribe the manner in which these accounts shall be kept. Pursuant to Chapter 4901:1-13-01, Ohio Administrative Code, the Commission adopted the Uniform System of Accounts ("USOA") for gas utilities established by the Federal Energy Regulatory Commission ("FERC") for use in Ohio. For Ohio regulatory purposes, the system of accounts is only applicable to the extent that it has been adopted by the Commission. Therefore, the Commission may modify the USOA prescribed by FERC as it applies to utilities within the state of Ohio.

As noted previously, pursuant to the Stipulation in Case No. 05-221-GA-GCR *et al.*, Columbia agreed to file a DSM application. On March 3, 2008, Columbia filed an Application for Authority to Increase Rates for Gas Distribution Service and approval of an Alternative Rate Regulation Plan in Case No. 08-0072-GA-AIR *et al.* As part of its alternative regulation plan, Columbia requested approval of a proposed Rider DSM to recover DSM costs, including those deferred expenses incurred in development and implementation of the DSM programs. This Alternative Rate Plan further included a proposal that Rider DSM be determined annually based on the actual costs of the program for the previous calendar year with rates to become effective the following May 1 and Columbia be permitted to defer related carrying costs until such time rate recovery commences.

Concurrently, on March 3, 2008, Columbia filed for approval an Application for Approval to Change Accounting Methods. Columbia, in part, requested therein authority to modify its accounting to provide for the deferral of all DSM

program expenses in special subaccounts of Account 182-Other Regulatory Assets for recovery through Rider DSM.

On July 3, 2008, Columbia filed an application in Case No. 08-833-GA-UNC for Approval of a Demand Side Management Program for Residential and Commercial Customers as described in detail above which was approved by the Commission on July 23, 2008.<sup>9</sup>

On October 24, 2008 the parties of record in Case No. 08-0072-GA-AIR et al. filed a Joint Stipulation and Recommendation that included therein a recommendation that Columbia be authorized to establish a Demand Side Management Rider ("Rider DSM") for the Small General Service Class. Pursuant to the terms of the Stipulation Columbia must file its Rider DSM pre-filing notice by November 30 of each year which shall contain estimated schedules for the Rider to become effective the following May. By the following February 28, Columbia must file an updated application and schedules that reflects the use of actual data supporting the proposed Rider DSM. The Stipulation further included a recommendation for the Commission's approval of Columbia's request for authority to modify its accounting to give effect to the terms of the DSM provisions as described in the Staff Report and Columbia's Application.

Columbia did not spend the full 2009 DSM amount contemplated in the 2008 rate case order due to 2009 being the implementation year. As a result, the parties in Case No. 09-1036-GA-RDR (2009 IRP/DSM Rider Case) recommended and the Commission approved that all unspent DSM amounts be rolled into the expense caps for the calendar years 2010 and 2011. This treatment will result in estimated DSM expenditure of approximately \$15.0 million during the calendar year 2011.

Columbia seeks authority from the Commission to: (1) continue its DSM program for an additional five years; (2) expand its DSM program to include new DSM programs for customers; (3) increase the total DSM funding level to approximately \$20.0 million for the calendar year 2012; (4) increase the annual the DSM funding level by approximately 3% each calendar year thereafter for the balance of the five-year period; (5) establish Rider DSM for the five-year period based on calendar year 2011 DSM expenditures; and (6) modify its accounting to provide for the deferral of the difference between actual calendar year DSM program expenses, including Columbia's portion of shared savings, incurred during the calendar years 2012 through 2016 and recoveries during those same years at the Rider DSM level to be established in the Rider DSM adjustment case to be filed in February 2012 .

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<sup>9</sup> The Commission issued a Finding and Order that provided for approval of Columbia's DSM application subject to approval of the DSM cost recovery rider proposed in the rate case and any additional conditions imposed therein.



Columbia will defer expenses in special sub-accounts of Account 182-Other Regulatory Assets for recovery through Rider DSM. DSM expenses eligible for deferral will include all expenses incurred through implementation of comprehensive, ratepayer funded, cost-effective, energy efficient programs made available to all customers served under Columbia's Small General Service rate schedule during the years 2012-2016. Consistent with its current program and the Commission's Entry in Case No. 0072-GA-AIR *et al.*, Rider DSM will further include carrying costs to be computed at the Company's current cost of long-term debt and any incentives approved by the Commission. The recovery of the remaining deferred account balance will be addressed through a separate proceeding or Columbia's next base rate case proceeding. Columbia's portion of shared savings during each calendar year will be calculated and supported through an annual filing based on actual data for the previous calendar year. This report will be filed by Columbia no later than June 30 of the subsequent calendar year with deferral authority assumed to be granted absent an objection by Staff within thirty days of the filing. Columbia will recognize its portion of shared savings upon receipt of authority to defer these amounts.<sup>10</sup>

The requested expansion and continuation of Columbia's DSM program and proposed change in accounting procedure does not result in any increase in rate or charge, and the Commission can therefore approve this application without a hearing.

## **5. Other DSM Considerations**

### **5.1. DSM Program Funding Levels**

Columbia will monitor and evaluate the level of success of all of its DSM programs. If, through program analysis, it is determined that a particular program design is not likely to invest all of the resources available to it, Columbia retains the flexibility to shift funding between and within programs without Commission approval in order to maximize program performance and customer benefits.

### **5.2. DSM Program Time Frames**

The proposed time frame for DSM implementation is January 1, 2012 to December 31, 2016. Columbia's current DSM program expires on December 31, 2011; therefore, expedited treatment of this application is requested, with approval requested within 60 days of this application. Because Columbia has the support of the DSMSG, Columbia does not anticipate any hardship posed by an

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<sup>10</sup> The DSM Deferral-Account 182 will be debited and Revenue or Contra-Expense will be credited.


expedited procedural schedule. If, for any reason, implementation is delayed and a calendar year implementation time frame cannot be adhered to, Columbia requests that a program year be established as an alternative to a calendar year with each program year beginning on the month and day of approval of the DSM filing, if it is after January 1, 2012.

## **6. Conclusion**

Columbia hereby respectfully requests the Commission approve its Application for the Implementation of Demand Side Management Programs and the Recovery of Costs and Change in Accounting Methods as described in the instant Application and establish an expedited procedural schedule to ensure implementation of the new programs within 60 days of the date of this filing.

Respectfully submitted,

**COLUMBIA GAS OF OHIO, INC.**

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## APPENDIX A

### DSM Program Descriptions and Operating Plan

#### *Residential Programs*

##### *Residential Weatherization Program - Home Performance Solutions*

<b>Estimated Budget</b>	Incentives: \$29.4 million Program Services: \$13.5 million Administration, Education & Marketing: \$3.1 million Evaluation: \$0.265 million Total: \$46.3 million
<b>Participation &amp; Savings Targets</b>	Participation – Audits: 29,409; Conversions: 19,586 Mcf Savings – Annual: 73,532; Cum. 5yrs.: 367,661; Lifetime: 8,445,954
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1.20 Utility BCR = 1.31 Participant BCR = 9.07 Rate Impact = \$0.0015/Mcf (years 1-5)
<b>Program Objective</b>	The objective of the Home Performance Solutions program is to help customers lower their natural gas usage through the adoption of quality attic and wall insulation and advanced air sealing retrofits in existing homes and to increase the market share of high efficiency heating systems during system replacements. The program offers greater incentives to senior citizens at or below Area Median Income and households with incomes less than or equal to 80% of the Area Median Income who are less likely to be able to afford energy efficiency upgrades.
<b>Program Theory or Market Barriers and Approaches to</b>	Residential customers encounter many obstacles in improving the energy efficiency of their homes: <ul style="list-style-type: none"> <li>• Customers lack reliable information on the effectiveness and bill savings of energy conservation meas-</li> </ul>

<p><b>Overcome Them</b></p>	<p>ures. Many customers are not aware of the potential energy savings from the installation of insulation, air sealing and high-efficiency natural gas appliances.</p> <ul style="list-style-type: none"> <li>• The existing market for home energy efficiency upgrades is fragmented, incomplete, and confusing and is still in its infancy in Ohio. Advanced diagnostic air sealing work is essentially unavailable and there is usually little oversight of insulation or HVAC contractors in terms of work quality or performance claims.</li> <li>• Many customers have limited funds to pursue energy efficiency retrofits or to select high-efficiency equipment when making a replacement.</li> <li>• Even when interested in making improvements, many customers lack the time and expertise to solicit and evaluate contractor bids.</li> </ul> <p>The Home Performance Solutions program will simplify the process of identifying and implementing cost-effective energy conservation measures through the provision of high-quality, low-cost computerized and diagnostic energy audits, customer financial incentives, and project management. The program will work to build the market for quality Home Performance Solutions services by continuing incentives to encourage comprehensive energy efficiency work and by providing contractor training, oversight, and quality control to ensure that capacity and quality work is available.</p>
<p><b>Program Description</b></p>	<p>The Home Performance Solutions program provides low-cost, computerized, diagnostic energy audits and rebates for energy conservation measures to customers to help offset the costs of rebate-eligible energy efficiency upgrades. The program will be operated by a program implementation contractor.</p> <p>Energy audits will be conducted by the program implementer which will ensure a technically sound and consistent approach. All program energy auditors will be certified to per-</p>

form advanced diagnostic audits. The energy audit process will include installation of some lower cost measures including programmable thermostats, energy efficient showerheads and faucet aerators, when applicable. The energy audit fee will be \$50 and may be refunded to the customer if any major energy conservation measures are performed.

Major program-eligible energy conservation measures will be installed by insulation, air sealing, and HVAC contractors. Contractors must attend program orientation and training to be qualified to perform work eligible for rebates. Contractors will also be required to participate in continuing education seminars, including certification of employees performing work on residences. The program implementer will provide project management and oversee the contractors' work quality. In addition, Columbia staff will also perform random and/or targeted quality assurance inspections of contractors' completed work.

Rebates will be offered to customers for insulation, air sealing, and HVAC measures that are deemed cost-effective by the energy audit. Rebates will be equal to: up to 40% of the insulation cost, 60% of the air sealing cost, and \$200 for a high-efficiency furnace upgrade. More comprehensive retrofits of energy conservation measures will be encouraged by increasing the rebates if multiple program-eligible measures are installed. These bonus rebates increase from the standard rebate level to up to 60% for insulation, 70% for air sealing, and \$400 for a furnace upgrade.

Customers with incomes at or below 80% of area median income and senior citizens with incomes at or below area median income will pay a \$20 energy audit fee and receive rebates of up to 90% of the insulation and air sealing costs and \$1,000 for a high-efficiency heating system upgrade.

The program may also make available subsidized financing in collaboration with banks and the state of Ohio.

<b>Target Market</b>	<p>All residential customers are eligible for the Home Performance Solutions program, but marketing efforts will target customers with high usage (&gt;100 Mcf per year) and higher use customers already replacing an existing furnace.</p> <p>The program may also continue to employ geographic targeting, potentially pre-qualifying some entire neighborhoods for the <math>\leq 80\%</math> area median income customer population. Targeting can reduce the costs of program marketing and delivery and, when combined with the lower-income segment, may help address the owner/renter dilemma.</p> <p>Recent market research conducted by Columbia indicates that high-efficiency furnaces may already have nearly a 70% market share in Ohio. As in previous years, this potential free-rider "problem" will be used as a tool to market the Home Performance Solutions program to customers and as a means to enlist HVAC contractors as allies in generating leads.</p> <p>Although the heating system rebates will likely include some customers who would have purchased efficient systems anyway (i.e., free-riders), the program is designed to use that fact as a way to market additional less commonly installed energy conservation measures while simultaneously limiting the cost of free-ridership by creating a hurdle (the energy audit) to receive the rebate.</p>
<b>Eligible Energy Conservation Measures</b>	<ul style="list-style-type: none"> <li>• Attic Insulation and ancillary work (e.g., required venting)</li> <li>• Wall Insulation</li> <li>• Blower-door guided air sealing</li> <li>• Furnace/Boiler replacement: AFUE <math>\geq 95\%/86\%</math></li> <li>• Programmable thermostats: free during audit</li> <li>• Energy efficient showerheads: free during audit</li> </ul>

<b>Implementation Strategy</b>	<p>The program will be operated by a single program implementation contractor that will be charged with developing/providing: the energy audit tool; technical standards for the work; program procedures and forms, marketing materials, the program tracking system database, and quality control procedures. All of these tasks will be overseen by Columbia staff. The program implementer will also provide the in-home energy audits; follow up with customers; train the contractors; oversee the contractors' work; provide quality control through phone calls, field visits and database analysis; and provide regular program management reports to Columbia with detailed information on program marketing and participation and progress compared to goals and budgets.</p> <p>Homes that have previously received an energy audit through the program during 2009-2011 will not be eligible to receive an audit again unless a new customer has moved into the home, but the dwelling may still be eligible for rebates on eligible energy conservation measures identified in the previous audit if all eligible measures were not previously installed.</p>
<b>Marketing Strategy</b>	<p>Program incentives and marketing are structured to encourage participation from high use customers and customers replacing existing heating equipment to build the market penetration of insulation and air sealing work and, to a lesser degree, high-efficiency heating systems. Targeted marketing is expected to improve program cost-effectiveness by soliciting participation from households that would benefit most from the program energy conservation measures.</p> <p>The primary marketing methods will include direct mail to high use customers and direct contact with insulation and HVAC contractors. Marketing will also include press releases and related media work to publicize the program, and a description of the program at all existing company customer contact points such as the internet, Columbia's</p>



	web site and bill inserts. All customers will be provided access to the program, but customers with lower usage may be steered to other appropriate programs such as a proposed on-line energy audit or the Simple Energy Solutions program.
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***Residential New Construction Program - Energy Efficient New Homes***

<b>Estimated Budget</b>	Incentives: \$4.6 million Program Services: \$3.4 million Administration, Education & Marketing: \$1.9 million Evaluation: \$0.313 million Total: \$10.2 million
<b>Participation &amp; Savings Targets</b>	Participation – 10,013 homes over 5 years Savings – Annual: 40,847 ; Cum. 5 yrs.: 204,236; Lifetime: 4,646,220
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1.25 Utility BCR = 3.28 Participant BCR = 2.44 Rate Impact = \$0.015/Mcf (years 1-5)
<b>Program Objective</b>	The objective of the Energy Efficient New Homes program is to encourage builders to build housing that exceeds code minimum energy efficiency levels and which are either Energy Star compliant, have a Home Energy Rating Score of 80 or less, or provide energy savings over code minimum levels based on other accepted energy modeling approaches.

<p><b>Program Theory or Market Barriers and Approaches to Overcome Them</b></p>	<p>Builders and new home buyers encounter many obstacles to improving the energy efficiency of new homes:</p> <ul style="list-style-type: none"> <li>• First costs continue to drive a significant proportion of customers to buy homes that are code minimum compliant.</li> <li>• Builders may lack reliable information on the best approaches to achieve high-efficiency levels cost-effectively.</li> <li>• Homebuyers lack information about energy efficiency and may be unsure of the credibility of energy efficiency claims.</li> <li>• Homebuyers may not have the funds to pay for higher efficiency levels in new homes.</li> <li>• Builders may not be sure they can recoup the costs of the upgrades in the sales price.</li> </ul> <p>The Energy Efficient New Homes program will provide builders with training, technical assistance, subsidized home energy ratings, direct financial incentives and marketing assistance for producing efficient new homes that exceed state code minimum. The program will also provide training to home energy raters and realtors.</p>
<p><b>Program Description</b></p>	<p>The Energy Efficient New Homes program will provide incentives to home builders within Columbia Gas of Ohio's service territory to build homes that exceed state energy code minimum levels.</p> <p>The program will offer free technical assistance to builders and will help subsidize the cost of the home energy rating and/or a share of the incremental costs to cost-effectively increase the energy efficiency of the homes above code minimum to program energy efficiency levels.</p> <p>Where possible, Columbia and/or its program implementer will partner with electric utilities to leverage resources and maximize energy savings in new homes.</p> <p>Columbia proposes two "tiers" of energy efficiency levels for new homes. Tier 1 will include homes that have a HERS</p>

	score of 80 or less, but which are not qualified for Energy Star. Tier 2 will be homes that are Energy Star version 3.0 (or later) compliant and have a HERS score of 75 or less.
<b>Target Market</b>	Builders and buyers of new, gas-heated, single-family homes built in the Columbia service territory will be the target market for the program. The program will seek to maintain participation by existing builders participating in the Energy Star program, as well as increase participation by Affordable Housing developers and “value” builders currently building to code minimum.
<b>Eligible Energy Efficiency Measures</b>	<ul style="list-style-type: none"> <li>• Energy Star compliant homes Non-Energy Star homes using approaches builders choose to use to qualify the home at a HERS score of 80 or less.</li> <li>• Multi-family buildings that qualify under Energy Star.</li> </ul>

<b>Implementation Strategy</b>	<p>The program may be operated by a program implementation contractor that will manage the program operations. The implementation contractor's work will be overseen by Columbia staff.</p> <p>The program implementer will develop and maintain: program procedures and forms for use by raters and builders; marketing materials (in collaboration with Columbia's DSM marketing contractor) to promote the program; a program tracking system database for program reporting, management, and evaluation; and quality control procedures. The program implementer will provide training and provide technical staff to assist builders and raters and provide quality assurance. The implementer will also promote the program and efficient new homes to builders, realtors, and the public.</p>
<b>Marketing Strategy</b>	<p>The program will provide marketing strategies for recruiting builders, promoting the homes to realtors and lenders, and helping the builders and realtors market the homes to the public. The marketing to builders and realtors will primarily occur through direct contacts and working through existing builder and realtor organizations. Marketing to the general public will primarily consist of providing assistance to the builders' and realtors' marketing efforts and establishing the program's "brand" with the public.</p> <p>Marketing will also include press releases and related media work to publicize the program, and a description of the program at all existing company customer contact points such as the internet, Columbia's web site, and bill inserts.</p>

***Residential Low Cost Measure Rebate Program - Simple Energy Solutions***

<b>Estimated Budget</b>	Incentives: \$0.583 million Program Services: \$0.546 million Administration, Education & Marketing: \$1.35 million Evaluation: \$0.160 million Total: \$ 2.64 million
<b>Participation &amp; Savings Targets</b>	Participation – 75,795 rebates over 5 years Mcf Savings – Annual: 14,595; Cum. 5 yrs.: 72,976; Lifetime: 732,864
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 3.07 Utility BCR = 2.96 Participant BCR = N/A (no average incremental cost) Rate Impact = \$0.0004/Mcf (years 1-5)

<b>Program Objective</b>	The objective of the Simple Energy Solutions program is to promote the purchase, installation and use of low-cost, energy conservation measures that are cost-effective for Columbia's residential customers. Programmable thermostats, energy efficient showerheads and faucet aerators are the products specifically included in the program design. Other low-cost products may be added if appropriate.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	There are several relatively low-cost energy efficiency retrofit products that are cost-effective for most residential customers, but may not be as widely used as they could be. Some reasons for this lack of market share include: <ul style="list-style-type: none"> <li>• Customers may not be aware of the energy savings of some retrofit products.</li> <li>• Customers may not be aware of the existence or availability of some retrofit products.</li> <li>• Retailers such as home improvement and hardware stores may not stock, or sufficiently promote the benefits of, such products.</li> <li>• Customers may not be able to install products on their own.</li> <li>• Apartment complexes and multi-family building management may have no incentive to help renters</li> </ul>

	<p>manage their energy use.</p> <p>For example, many people are uncertain if a programmable thermostat will save them much energy. Many people may also not be aware that energy efficient showerheads exist that may provide a good quality shower while using much less water than a standard (even low-flow) showerhead may use. Local home improvement and hardware stores may not stock a wide selection of improved, high-quality energy efficient showerheads and aerators.</p> <p>The Simple Energy Solutions program addresses these obstacles by providing public education and marketing to enhance the credibility of the energy savings benefits from such products, by offering rebates for the products, and by promoting the availability of qualified products at hardware and home improvement retailers, and at public events. In addition, the program will include a direct install component for customers in rental properties and may provide direct install services for customers unable to install the products on their own.</p>
<b>Program Description</b>	<p>The program will offer customers rebates of \$25 per programmable thermostat, \$10 per energy efficient showerhead and up to \$1 per faucet aerator. The products and rebates will be promoted through education and marketing efforts and direct contact with retailers. The program will also provide on-line and mail order fulfillment through its e-store.</p>
<b>Target Market</b>	<p>All Columbia residential customers with natural gas space heating or hot water heating can participate, unless they have participated in the program previously.</p>
<b>Eligible Measures</b>	<ul style="list-style-type: none"> <li>• Programmable thermostats</li> <li>• Energy efficient showerheads (<math>\leq 1.8</math> gallons per minute)</li> <li>• Faucet aerators (<math>\leq 1.5</math> gallons per minute)</li> </ul>

<b>Implementation Strategy</b>	<p>The program may be operated by Columbia staff in conjunction with its e-store and marketing contractors. Other third party contractors may provide direct installation of measures in apartment buildings and for customers unable to install products on their own, including senior citizens.</p> <p>Columbia and its contractors will develop: program procedures and rebate forms; marketing materials to promote the program; a program tracking system database for program reporting, management, and evaluation; and quality control procedures.</p> <p>Columbia's contractors will perform rebate fulfillments and maintain an on-line fulfillment option for customers. Columbia and its marketing contractor will also market the program to the public and owners of multi-family buildings.</p>
<b>Marketing Strategy</b>	<p>The program will continue to use targeted and community/event based marketing strategies for promoting the rebate-eligible products to customers.</p> <p>Columbia may also revisit marketing to retailers, which would primarily occur through direct contacts with home improvement stores and hardware stores. The program will also be marketed through educational and promotional activities such as press releases and media work to publicize the program. The program will also be promoted through the internet, Columbia's web site, and bill inserts.</p>



### *Residential High-Efficiency Heating System Rebate Program*

<b>Estimated Budget</b>	Incentives: \$5 million Program Services: \$1.2 million Administration, Education & Marketing: \$1.1 million Evaluation: \$.225 million Total: \$7.6 million
<b>Participation &amp; Savings Targets</b>	Participation – 16,706 furnaces Mcf Savings - Annual: 26,881; Cum. 5 yrs.: 134,404; Lifetime: 2,419,270
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1.61 Utility BCR = 2.44 Participant BCR = 3.50 Rate Impact = \$0.0006/Mcf (years 1-5)

<b>Program Objective</b>	The purpose of the High-Efficiency Heating System Rebate program is to increase the penetration rate of high-efficiency, natural gas heating equipment in the replacement market in rental properties and other markets where recent research indicates that there are low penetration rates of this technology.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	<p>Recent research conducted by Navigant for Columbia <sup>11</sup> indicated that penetration rates of high-efficiency heating systems in rental and low-income customer markets, as well as in select counties within Columbia's 61-county service territory, continue to lag other market segments.</p> <p>There are numerous reasons for this lag in certain markets:</p> <ul style="list-style-type: none"> <li>• Landlords who do not pay the natural gas heating bills of their tenants have little incentive to purchase high-efficiency equipment when replacing older, defective equipment.</li> <li>• The high incremental cost of upgrading from mini-</li> </ul>

<sup>11</sup> "Residential Furnace Market Assessment, Final Report," Navigant, June 3, 2011

	<p>mum to high-efficiency heating equipment is a key barrier for some homeowners to take advantage of the energy savings opportunities that high-efficiency technology provides.</p> <ul style="list-style-type: none"> <li>• Some residential customers may not be aware of the savings that high-efficiency technology provides.</li> <li>• The decline of federal tax credits for high-efficiency heating equipment may make first cost a bigger barrier than in recent years.</li> </ul> <p>Columbia will provide rebates to landlords to install high-efficiency heating equipment in rental properties where minimum efficiency equipment would otherwise be installed. Columbia will also target low market share counties to provide residential customers with incentives to upgrade to high-efficiency heating systems. Columbia will also provide high-efficiency heating equipment information on its web site and at public events.</p>
<b>Program Description</b>	<p>The High Efficiency Heating System Rebate program will provide rebates to stimulate the installation of high-efficiency, natural gas heating systems in rental properties and in select markets in Columbia's service territory where installation rates of the technology lag other markets.</p> <p>In 2012-2013, the program will provide a rebate of \$300 toward the purchase of high-efficiency furnaces/boilers with an AFUE of <math>\geq 92\%/85\%</math>. If the United State Department of Energy ("USDOE") implements a minimum residential furnace standard of 90% in 2013, the program will raise the minimum forced air furnace efficiency level to <math>\geq 95\%</math> AFUE (or CEE Tier 3) to qualify for the rebate. Rebates can be combined with Federal Tax Incentives to help continue to transform the market. The rebate level could change depending on changes in the price of natural gas and heating equipment over the duration of the program.</p> <p>The incentive will only be available for a primary heating system. The program may target high use residential dwell-</p>

	ings where energy savings opportunities are highest.
<b>Target Market</b>	The target market for the program includes the rental property market, and residential customers in counties with low penetration rates of high-efficiency equipment.
<b>Eligible Energy Conservation Measures</b>	<ul style="list-style-type: none"> <li>• Residential furnaces with AFUE <math>\geq</math> 92%.</li> <li>• Residential furnaces with AFUE <math>\geq</math> 95% in years 3 through 5 of the program if USDOE raises the minimum AFUE to 90%.</li> <li>• Residential boilers with AFUE <math>\geq</math> 85%AFUE.</li> </ul>
<b>Implementation Strategy</b>	<p>The program may be contracted to a program implementation vendor. Columbia and its contractor(s) will develop: program procedures and rebate forms; marketing materials to promote the program; a program tracking system database for program reporting, management, and evaluation; and quality control procedures.</p> <p>The rebate incentive may be a direct deduction from the customer's invoice for the heating system replacement work performed by a qualified, participating contractor.</p> <p>Columbia, or its contractors, will perform rebate fulfillment. Columbia and its marketing contractor will market the program to the public and owners of rental properties, as well as residential customers in other target markets.</p>

<b>Marketing Strategy</b>	The primary marketing methods will include direct mail to higher use customers who appear to live in rental properties and direct contact with HVAC contractors and landlord/rental associations. Marketing will also include press releases and related media work to publicize the program, and a description of the program at all existing company customer contact points such as the internet, Columbia's web site, and bill inserts.
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***Behavior Modification/Home Energy Report Program***

<b>Estimated Budget</b>	Incentives: \$0 Program Services: \$5.2 million Administration, Education & Marketing: \$.146 million Evaluation: \$.150 million Total: \$5.5 million
<b>Participation &amp; Savings Targets</b>	Participation: – up to 175,000 customers per year Mcf Savings: – Annual: 127,915; Cum. 5 yrs.: 639,577; lifetime: 639,577
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1.11 Utility BCR = 1.11 Participant BCR = N/A (no average incremental cost) Rate Impact = \$0.0009/Mcf (years 1-5)
<b>Program Objective</b>	The purpose of the Behavior Modification/Home Energy Report program is to provide a large number of residential customers with energy usage information and, potentially, rewards, that will result in them taking action to lower their energy use.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	Limited resources make it impractical to weatherize all of the customers in a utility service territory in a short period of time. In addition, some customers will not want to engage in the intrusive process of weatherization.  Research in psychology and behavioral economics suggests that non-price interventions such as behavior-based energy efficiency can be a powerful way to change consumer choices. Some of these behavioral approaches, which include

	<p>providing information that appeals to social norms, are relatively inexpensive per program participant and are effective at getting customers to take action to save energy.</p> <p>Home Energy Reports have proven to be a cost-effective way for utilities to engage with large numbers of customers to produce large and measureable energy savings.</p>
<b>Program Description</b>	<p>The Behavior Modification/Home Energy Report program targets specific and relevant energy efficiency recommendations to each utility customer, making it easier for them to take action on recommendations and programs most relevant to them. The main elements of the program may include direct-mailed Home Energy Reports, a customer web portal, and analytics to derive insights about customer segments. The program may also include e-mail communications, reminder and engagement calls, a customer service interface, targeted on-line advertising, and program performance measurement and reporting, to drive customers to take actions to lower their natural gas use. Other potential behavioral models include rewards for customers as well.</p> <p>The program approach selects random participants from a target population to participate in the program based on an energy usage profile, with an equivalent-sized, non-participant group for comparison purposes to measure energy savings.</p> <p>The program will engage at least 75,000 customers in year 1, and 150,000 customers in year 2, most likely in the top 10-30% usage tier and 25,000 customers each year in a middle or average usage tier.</p> <p>Depending on how successful the program is in years 1 and 2, the program may be continued for years 3 through 5 and will be considered for expansion to serve additional customers.</p>

<b>Target Market</b>	Higher use households in the top 10-30% natural gas usage level, and “middle” user households.
<b>Eligible Measures</b>	Home Energy Reports and/or rewards will be provided directly to customers.
<b>Implementation Strategy</b>	Columbia will seek a third party vendor to provide the services under this program.
<b>Marketing Strategy</b>	The program will be marketed by the third party vendor chosen to implement the program.

### On-Line Energy Audit

<b>Estimated Budget</b>	Incentives: \$0 Program Services: \$530,914 Administration, Education & Marketing: \$125,000 Evaluation: \$55,000 Total: \$710,914
<b>Participation &amp; Savings Targets</b>	Participation – Audits: TBD Mcf Savings – N/A
<b>Cost Effectiveness Metrics</b>	N/A  Rate Impact = \$0.00001/Mcf (years 1-5)
<b>Program Objective</b>	The purpose of the On-Line Energy Audit is to provide a simple, easy-to-use energy audit for customers who want to determine how efficient their homes are and provide information on low-cost actions as well as DSM programs that are appropriate for them to participate in.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	Some customers prefer to engage with utilities via the internet. Other customers participate in DSM program when all they may want or need is a simple analysis of their energy use to help them make decisions. Columbia proposes to interact with these customers through an On-line Energy Audit tool. The tool will be a simplified, but highly accurate energy audit that will provide customers with quick feedback on the performance of their home. Customers will be referred to Columbia’s DSM programs if their usage level and

	energy audit results indicate that they are in need of program services. For customers with already efficient homes, the tool may result in lower costs to other DSM programs by avoiding a more expensive, on-site energy audit.
<b>Program Description</b>	The On-line Energy Audit will be an internet-based tool that will provide an energy score, a customized action plan, and links to energy rebates, tax credits, and energy contractors.
<b>Target Market</b>	Customers who prefer to interact with Columbia on-line and customers with lower than average usage.
<b>Eligible Measures</b>	N/A
<b>Implementation Strategy</b>	Columbia will hire a third party vendor to provide an on-line energy audit tool on the company's web site.
<b>Marketing Strategy</b>	The on-line audit will be marketed to customers on-line, through bill inserts and company newsletters, e-mail, and through social media.

#### **Residential Low-Income Customer Weatherization Program – WarmChoice<sup>®12</sup>**

<b>Estimated Budget</b>	Program Measures: \$39.8 million Program Services: \$20 million Administration, Education & Marketing: \$4 million Evaluation: \$0.25 million Total: \$64 million
<b>Participation &amp; Savings Targets</b>	Participation – Households served: 13,000 Mcf Savings – Annual: 78,000; Cum. 5yr 1,170,000; Lifetime: 9,750,000
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1.11 Utility BCR = 1.06 Participant BCR = N/A (no cost to participants) Rate Impact: \$.0010

<sup>12</sup> The WarmChoice<sup>®</sup> Low-Income Weatherization Program is part of Columbia Gas of Ohio's portfolio of DSM programs. Part of the program is funded through base rates rather than through the Rider DSM.

<b>Program Objective</b>	The objective of the WarmChoice® low-income customer weatherization program is to reduce the energy usage and bills of low-income customers by installing attic, wall, and floor insulation, advanced duct and air sealing and some low cost retrofits such as water heater insulation, pipe insulation and energy efficient showerheads. Defective heating appliances that cannot be repaired are replaced with high-efficiency heating appliances, if applicable. Defective water heaters may also be repaired or replaced.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	<p>Low Income Residential customers encounter obstacles in improving the energy efficiency of their homes:</p> <ul style="list-style-type: none"> <li>• Customers have limited funds to pursue energy efficiency retrofits or to select high efficiency space and water heating equipment when a replacement is necessary.</li> <li>• Customers lack reliable information on the effectiveness and bill savings of efficiency retrofits.</li> </ul> <p>The WarmChoice® program will simplify the process of identifying and implementing cost-effective energy improvements through the provision of diagnostically-driven inspections, no cost energy efficiency retrofits, and project management services.</p>
<b>Target Market</b>	All low income residential customers at or below 150% of the federal poverty guidelines are eligible for WarmChoice®, but mobile homes must use 100 Mcf annually to be eligible for the program. Mobile homes using less than that amount are weatherized by the state of Ohio's federally-funded Home Weatherization Assistance Program ("HWAP"). Providers are encouraged to target high arrearage Percentage of Income Payment Plan ("PIPP") customers and customers with high usage. Program providers frequently leverage WarmChoice® with HWAP, the Ohio Department of Development's Electric Partnership Program, and various HUD or USDA funded home repair programs in addition to Ohio's



	Housing Trust Fund Home Repair program in order to maximize savings and services.
<b>Eligible Energy Conservation Measures</b>	<ul style="list-style-type: none"> <li>• Attic insulation and ancillary work (e.g., required venting)</li> <li>• Wall insulation</li> <li>• Floor insulation over unheated spaces</li> <li>• Water heater, pipe and duct insulation</li> <li>• Blower-door guided air leakage and duct sealing</li> <li>• Heating system repair or replacement (if defective): AFUE<math>\geq</math>92% for forced-air furnaces/<math>\geq</math>85% for boilers</li> <li>• Water heater repair or replacement (if defective)</li> <li>• Energy efficient showerheads</li> </ul>
<b>Implementation Strategy</b>	<p>The program is implemented by four community-based organizations (providers) that: perform the energy inspections; use applicable state weatherization and Columbia technical standards to perform inspections and the installation of energy conservation and other measures; provide program administrative procedures and forms, marketing materials, the program tracking system database, and quality control procedures. All of these tasks are overseen and administered by Columbia staff. The providers also perform customer education, follow up with customers; train the contractors; oversee the contractors' work; provide quality control through phone calls, field visits and database analysis; and provide regular program management reports to Columbia with detailed information on program participation and progress compared to goals and budgets.</p>

<b>Marketing Strategy</b>	Columbia provides the WarmChoice® providers with a list of potentially eligible customers from its DIS system. Providers also use the HWAP and Low-Income Home Energy Assistance Program ("HEAP") intake process and HEAP lists to recruit customers into the program. Providers use telemarketing, direct mail and community events to publicize the availability of the program.
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***Residential Energy Efficiency Education for Students***

<b>Estimated Budget</b>	Incentives: \$0 Program Services: \$1.95 million Administration, Education & Marketing: \$0 Evaluation: \$0.08 million Total: \$2 million
<b>Participation &amp; Savings Targets</b>	Participation – Student kits: 18,000; Measures: 63,149 Mcf Savings – Annual: 8,653; Cum. 5yrs.: 34,613; Lifetime: 216,365
<b>Cost Effectiveness Metrics</b>	Total Resource Cost BCR = 1 Utility BCR = 1 Participant BCR = N/A (no average incremental cost) Rate Impact = \$0.0003/Mcf (years 1-5)
<b>Program Objective</b>	The purpose of the Residential Energy Efficiency Education and for Students program is to provide school teachers in grades 5-12 with a kit of equipment to teach the science of energy and efficiency through classroom labs and to provide students with an energy kit, including energy efficient showerheads and faucet aerators that they will install in their homes. Students will be empowered as the energy leaders of their families. Students will also help make their families aware of other Columbia residential DSM programs.
<b>Program Theory or Market Barriers</b>	Energy efficiency and conservation is not usually on the minds of many school age children.

<b>ers and Approaches to Overcome Them</b>	<p>Helping students learn about energy, how they use it, what it costs, and its impacts on society will help make them aware of what is otherwise an often invisible product. The program will inform and educate customers and their children to enable them to use energy more efficiently.</p> <p>Providing students with a kit to install will engage them directly in energy conservation and may result in the household taking additional actions to reduce their energy use.</p>
<b>Program Description</b>	The Residential Energy Efficiency Student Education and Installation program will provide teachers with educational materials to teach students about natural gas and energy conservation. Students will receive a kit of materials to install as part of the curriculum.
<b>Target Market</b>	Teachers of students and students in the 5 <sup>th</sup> through 12 <sup>th</sup> grade level.
<b>Eligible Measures</b>	A kit of energy conservation materials, including energy efficient showerheads and aerators that can be installed at the student's home.
<b>Implementation Strategy</b>	The program will be contracted to a third party vendor to deliver in some markets within Columbia's service territory. Columbia will collaborate with AEP in some overlapping counties, as well as provide the program to students in some non-overlapping counties.
<b>Marketing Strategy</b>	The program will be marketed to school systems and teachers by the program contractor through a series of professional workshops and direct outreach.

### *Residential Energy Code Training and Evaluation*

<b>Estimated Budget</b>	<p>Incentives: \$0</p> <p>Program Services: \$.625 million</p> <p>Administration, Education &amp; Marketing: \$0</p> <p>Evaluation: \$0.100 million</p> <p>Total: \$.725million</p>
<b>Participation &amp; Savings Targets</b>	<p>Participation – Seminars/Participants: TBD</p> <p>Mcf Savings – TBD</p>
<b>Cost Effectiveness Metrics</b>	<p>Total Resource Cost BCR = N/A</p> <p>Utility BCR = N/A</p> <p>Participant BCR = N/A (no average incremental cost)</p> <p>Rate Impact = \$0.00001/Mcf (years 1-5)</p>
<b>Program Objective</b>	<p>The purpose of the Residential Energy Code Training and Evaluation program is to provide training to Ohio home builders, code officials and other stakeholders on Ohio's energy code and advanced, energy efficient building practices and to help determine residential energy use as a result of implementing new codes in Ohio.</p>
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	<p>Ohio will likely adopt the 2009 International Energy Conservation Code in the near future. Home builders indicate one of the main challenges they face is training for employees on code changes and new requirements for air tightness testing with a blower door. In addition the Ohio Board of Building Standards ("OBBS") is required to demonstrate code compliance to the US Department of Energy.</p> <p>Columbia will help builders, code officials, and other stakeholders overcome code implementation and building science related barriers by providing training seminars on the code, building science, and blower door use and results interpretation. Columbia will help OBBS show code compliance by tracking and measuring new home energy use compared to homes built under previous code levels.</p>

<b>Program Description</b>	The Residential Energy Code and Evaluation program will provide energy code-related training to homebuilders, code officials and other stakeholders in the housing industry, as well as research regarding the actual energy usage of homes built to past and present code levels. Columbia will coordinate its program with other utilities where possible.
<b>Target Market</b>	The target market for code training includes homebuilders, code officials, and other stakeholders in the housing industry. The target market for the energy use research is the Ohio Board of Building Standards and other stakeholders.
<b>Eligible Energy Conservation Measures</b>	Not applicable.
<b>Implementation Strategy</b>	<p>Columbia will coordinate development and implementation of energy code related training classes with stakeholders and other utilities with similar DSM programs or objectives. Columbia may hire third party vendors to provide energy code training and course logistics services.</p> <p>Columbia will work with an independent evaluator to prepare an evaluation report that quantifies energy use of code built homes.</p>
<b>Marketing Strategy</b>	Code training seminars and classes will be marketed by Columbia's marketing contractor through OBBS, Building Industry Associations, Ohio homebuilder associations, code offices, the state energy office, and other stakeholders through direct outreach including mail and email, as well as through Columbia's web site.

## Commercial Programs

### *Commercial – Innovative Energy Solutions*

<b>Estimated Budget</b>	Program Services: \$.2.5 million Administration, Education & Marketing Costs: \$.275 million Evaluation Costs: \$.150 million Total Costs: \$2.9 million
<b>Savings Targets</b>	To be determined on an individual project basis.
<b>Cost Effectiveness Metrics</b>	To be determined on an individual project basis.

<b>Program Objective</b>	The purpose of the Innovative Energy Solutions program is for Columbia to provide energy conservation opportunities to their commercial customers for energy efficiency projects that provide measureable, cost-effective savings.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	<p>Commercial customers are facing increasing energy costs along with other costs that impact the profitability of their business. Some commercial customers are also seeking more energy efficient options due to their corporate commitment to sustainable environmental practices. These business customers are more likely to fall in early adopter category for innovative energy efficiency products and services. However, as with most businesses, they are not always aware of which product models or approaches are the most energy efficient alternatives available.</p> <p>Many commercial customers have little access to capital for energy audits or to move cost-effective projects forward.</p>

<b>Program Description</b>	<p>Columbia will collaborate with customers in its service territory and with other industry partners engaged in energy efficiency, including, but not limited to, researching existing and emerging energy efficient technologies to develop demonstration projects to promote leading edge energy efficiency approaches.</p> <p>The program will seek to partner on projects that demonstrate the highest level of energy efficiency achievable today for a whole premise using the latest energy efficient technologies alongside electric and water saving technologies; or, Columbia will seek to develop individual projects that demonstrate the energy savings advantage of specific technologies for a particular customer segment (i.e., solar water heating for schools, firehouses, etc.).</p> <p>This will be a competitive award program that provides a matching funding stream to support implementation of energy audits and energy conservation measures, evaluation measurement and verification of savings, as well as research into technologies that may be added to the portfolio of programs offered by Columbia in the future. The program may offer funding in the form of award grants to winning projects or proposals submitted by customers or trade groups that demonstrate innovative application of energy efficient technologies. The program will emphasize incorporating emerging high-efficiency technologies, existing high-efficiency technologies and energy conservation measures, or use of renewable technologies to off-set or enhance natural gas technologies.</p>
<b>Target Market</b>	<p>Columbia commercial customers.</p>
<b>Eligible Measures</b>	<p>For customers with usage &gt;300 Mcf/year, to be determined on a case-by-case basis through an energy audit.</p> <p>For customers with usage <math>\leq</math>300 Mcf/year, measures can be determined through an energy audit, or the following measures may be installed with no audit and will be eligible for a rebate:</p>

	<ul style="list-style-type: none"> <li>• Programmable thermostats</li> <li>• Water heater insulation</li> <li>• Hot water saving devices, including pre-rinse spray valves, faucet aerators and energy efficient shower-heads</li> <li>• Attic and wall insulation</li> <li>• High-efficiency heating equipment</li> <li>• Infrared Fryers</li> <li>• Radiant Heaters</li> <li>• Efficient water heater</li> <li>• Duct insulation/sealing</li> </ul>
<b>Implementation Strategy</b>	<p>Columbia staff will manage the program, and develop and maintain forms and tracking systems. Columbia will use a project review advisory team to rate or assess large projects that require an investment of more than \$50,000.</p> <p>Large projects may be limited to an eighteen month window for project planning, implementation, and results. As such, most projects will focus on technologies that are commercially-ready, known to produce viable energy savings, but have low market awareness/penetration, and possibly high-first costs.</p> <p>The review committee will monitor projects that require an investment of more than \$50,000 in conjunction with Columbia staff to assess whether the funding is adequately supporting cost-effective energy efficiency projects.</p>
<b>Marketing Strategy</b>	<p>Marketing and outreach strategies may vary depending on the type of projects and the targeted audience. Strategies may include:</p> <ul style="list-style-type: none"> <li>• Face-to-face contact with customers to alert them of the demonstration site via: utility staff, contractors, trade shows, community events, etc.</li> <li>• Website information</li> <li>• Direct mail to targeted groups</li> <li>• PR campaign</li> </ul>



<b>Other Considerations</b>	<p>Other strategies may help supplement the success of this program include:</p> <ul style="list-style-type: none"> <li>• Availability of tax credits for key technologies such as solar</li> <li>• Cooperative education and training with trade associations</li> <li>• Vendor participation/donation of technologies</li> <li>• Aligning demonstrations/projects with national efforts to promote key technologies</li> </ul>

### *Commercial Customers - Energy Design Solutions*

<b>Estimated Budget</b>	Program Services: \$.637 million Administration, Marketing & Education Costs: \$.115 million Evaluation Costs: N/A Total Costs: \$.752 million
<b>Savings Targets</b>	N/A
<b>Cost Effectiveness Metrics</b>	To be determined

<b>Program Objective</b>	The objective of this program is to facilitate the education and training of building industry professionals and owners on the benefits of building energy efficient small buildings that are at least 30% more efficient than the commercial energy efficiency building code.
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**Program Theory or Market Barriers and Approaches to Overcome Them**

There currently is a wealth of information and programs available nationwide such as Energy Star High Performance Homes and High Performance Schools and LEED certification that encourage energy efficient building practices in residential and medium to large commercial new construction. These programs include design assistance, incentives for designers, and builder performance incentives for meeting specific energy efficiency targets that are above the state and national energy standards.

While small commercial buildings with up to 20,000 square feet may comprise the majority of office space, there are few energy efficiency programs designed exclusively for the designers, builders, developers and owners of these smaller buildings. Unlike working with the home builder segment where one builder could represent hundreds of homes, participation from this segment could potentially produce a high volume of new buildings that would most likely require individualized attention. Utility programs that include designer and builder incentives may have a difficult time being cost-effective with this segment given the potential for higher costs per unit.

Many designers and builders in this category are unaware of, or reluctant to implement, the positive impacts of integrating cost-effective energy efficiency into their designs due to a lack of true understanding of the approach and perceived budget constraints.

Other perceived barriers to adoption may include:

- Limited time to research energy efficient options.
- Lack of understanding or experience with energy modeling tools.
- Low awareness of the latest energy efficient technologies and their interactive effects.
- Perception that clients would not pay for equipment upgrades.

Providing a program that provides education and training, as

	<p>well as tools that are easily accessible, will help minimize the time and resources to locate the right information for designing efficient buildings. Building professionals value the hands on training. Also, providing one-on-one consultation when planning for construction of multiple units would provide further guidance on efficient design and help keep utility costs down.</p> <p>Small business owners and those who lease small buildings may face increasing energy costs along with other costs that impact the profitability and viability of their businesses. Having a high performance building using less energy would be a benefit and produce a win-win to the business owner, the building owner who wants full occupancy, and to the utilities that are encouraging energy efficiency.</p>
<b>Program Description</b>	<p>The Energy Design Solutions program will provide energy/code education to building professionals, including architects, engineers, and developers, involved in the development of smaller new buildings. In addition, the program will provide building project energy design and review assistance to determine whether cost-effective, energy efficient practices have been maximized.</p> <p>This program would seek to partner with electric utilities in the Columbia service territory that currently have commercial new construction programs, building trade associations such as AIA, BOMA, BIA, USGBC, AEE and ASHRAE, and, energy efficiency trade groups that are engaged in promoting energy efficiency in new construction. The program would include technical consulting and training (including continuing education credits) on incorporating high-efficiency natural gas technologies into new, small building construction.</p>

	<p>The program will provide educational seminars to support disseminating education and training on how to incorporate the latest energy efficiency technologies into new construction. The program will also offer direct technical design assistance for building industry professionals who are engaged in developing new construction plans for multiple small buildings. The program will emphasize incorporating building shell, space heat, water heat and efficient natural gas appliances.</p>
<b>Target Market</b>	<p>Building owners/developers and designers of new, small building construction with estimated square footage of 20,000, including small offices, retail, foodservice, etc. This includes builders who also build strip centers and franchise owners with multiple sites that individually meet the 20,000 square foot threshold.</p>
<b>Eligible Energy Conservation Measures</b>	<p>N/A</p>
<b>Implementation Strategy</b>	<p>The program will leverage existing information and programs from key industry groups that promote energy efficient building design through AIA's Sustainable Design Resources and ASHRAE's Advance Energy Design Guide series. ASHRAE's guides include two guides specifically for designing small retail and small office buildings with footprints of up to 20,000 sq. ft. The guides' current 30% energy savings target is above ASHRAE's Standard 90.1. The program will provide education on the integrated design process and advanced technologies to achieve 30% to 50% energy reductions.</p> <p>The program will include training modules on whole building and system design practices and tools that incorporate natural gas technologies for presenting at ongoing new construction seminars delivered by building trade groups. Columbia will procure building design and building science consultants to provide one-on-one technical consultations for builders and designers engaged in designing small building</p>

	<p>new construction projects that include multiple units (i.e., strip centers, franchisees with multiple locations) in Columbia's service territory.</p> <p>Finally, the program will include a recognition award component where a non-monetary reward (i.e., plaque for display, etc.) may be given to builders and owners who build energy efficient buildings that exceed the building energy code by 30% to 50% using knowledge gained from seminars, consultations, demonstrations and/or recommendations from energy efficiency audits.</p>
<b>Marketing Strategy</b>	<p>Marketing strategies will seek to tie-in to existing marketing strategies employed by the electric utilities and trade groups promoting sustainable small building new construction. Columbia will provide funding to expand the messaging in existing material to include information on high-efficiency natural gas technologies. Marketing may include:</p> <ul style="list-style-type: none"> <li>• Press releases to building professionals and their associations in the Columbia service territory.</li> <li>• Ads in building professional trade publications.</li> <li>• Face-to-face contact with customers via contractors, customer service reps, call centers, trade shows, community events, etc.</li> <li>• Information on Columbia and partners' websites.</li> </ul>
<b>Other Considerations</b>	<p>Other strategies that may help supplement the success of this program include:</p> <ul style="list-style-type: none"> <li>• Cooperative education and training with trade associations and educational institutions.</li> <li>• Collaborations with ongoing commercial programs with electric utilities.</li> <li>• Partnering with local governments engaged in building small municipal facilities.</li> <li>• Partnering with the High Performance Schools program from EPA.</li> <li>• Partnering with EPA's Energy Star Commercial Building Design program.</li> </ul>

*United States Environmental Protection Agency Portfolio Manager*

<b>Estimated Budget</b>	Program Services: \$0 Administration, Education & Marketing: \$49,000 Evaluation Costs: \$0 Total Costs: \$49,000
<b>Savings Targets</b>	N/A
<b>Cost Effectiveness Metrics</b>	N/A

<b>Program Objective</b>	The purpose of the EPA Portfolio Manager is to educate commercial customers on how their businesses use energy and what cost-effective opportunities exist to lower their energy bills.
<b>Program Theory or Market Barriers and Approaches to Overcome Them</b>	<p>Business owners are facing increasing energy costs along with other costs that impact the profitability of their business. These business customers are not always aware of what actions they can take to help them save on their energy bills. Many small business owners have expressed the need for tools to help them assess their energy use, to identify different energy efficiency options, and to help them determine the return on investment for taking action.</p> <p>Specifically, business owners are looking for tools and resources that:</p> <ul style="list-style-type: none"><li>• Simplify their research on energy efficient options, including information on what practices and measures will help reduce their costs.</li><li>• Provide benchmarking on best practices being used by similar businesses to manage energy costs.</li></ul> <p>EPA's Portfolio Manager will help customers navigate through what is now a complicated and sometimes intimidating process of determining what energy efficient options they should consider when replacing gas-fired equipment or upgrading other building systems.</p>

<b>Program Description</b>	EPA's Portfolio Manager is an interactive energy management tool that enables building owners to track and assess energy and water consumption across their entire portfolio of buildings in a secure on-line environment. Whether they own, manage, or hold properties for investment, Portfolio Manager can help them set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.
<b>Target Market</b>	Commercial customers. Total customers eligible: approximately 110,000.
<b>Implementation Strategy</b>	Columbia will provide a link to EPA's Portfolio Manager web site and encourage commercial customers to use the EPA web site.
<b>Marketing Strategy</b>	<p>Columbia's marketing strategy for EPA's Portfolio Manager will be comprised primarily of a combination of direct mail, one-on-one contact, and web site links. The approach may include:</p> <ul style="list-style-type: none"> <li>• Multi-lingual marketing materials including bill inserts, press releases, and e-mail marketing.</li> <li>• Face-to-face contact with customers via utility personnel, contractors, customer service reps, call centers, trade shows, community events, etc.</li> <li>• Link to the EPA Web site from the Columbia web site.</li> </ul>



## APPENDIX B

## 1. Columbia DSM Program Cost Effectiveness Test Results

Estimated Cost-Effectiveness, Columbia Gas of Ohio DSM programs

Program	Cost Effectiveness Test Results					
	TRC BCR	UCT BCR	PCT BCR	RIM (Years 1-5), \$/ccf	TRC \$/ccf	UCT \$/ccf
Home Performance Solutions	1.20	1.31	9.07	\$ 0.0035	\$1.03	\$0.96
WarmChoice	1.11	1.06	*	\$ 0.0050	\$1.14	\$1.20
HE HVAC Rebates	1.61	2.44	3.50	\$ 0.0006	\$0.74	\$0.49
Energy Efficient New Homes	1.25	3.28	2.44	\$ 0.0015	\$0.92	\$0.37
Home Energy Reports	1.11	1.11	*	\$ 0.0004	\$0.75	\$0.75
Simple Energy Solutions	3.07	2.96	N/A	\$ 0.0004	\$0.67	\$0.69
Residential Energy Code	-	-	-	-	-	-
Student Education	1.00	1.00	*	\$ 0.0003	\$1.05	\$1.05
On Line Audit	-	-	-	-	-	-
Innovative Energy Solutions	TBD	TBD	TBD	TBD	TBD	TBD
Energy Design Solutions	TBD	TBD	TBD	TBD	TBD	TBD
EPA Portfolio Manager	-	-	-	-	-	-
Totals	1.19				\$ 0.94	\$ 0.84
Total including other costs (non-program and DSMMSG)	1.17					

Note: Avoided Cost of Gas=\$9.26/Mcf

Note: \* On average, no incremental costs are projected. This can occur due to negative incremental participation costs for free-riders exceeding the positive incremental costs by other participants.

## 2. Columbia DSM Program Gas Savings Projections

Estimated Gas Savings Impacts, Columbia Gas of Ohio DSM Programs

Program	Gas Savings: Cumulative Incremental Mcf/yr					Total MCF
	2012	2013	2014	2015	2016	
Home Performance Solutions	70,207	144,000	218,156	292,708	367,661	1,092,733
WarmChoice	78,000	156,000	234,000	312,000	390,000	1,170,000
HE HVAC Rebates	26,881	53,762	80,642	107,523	134,404	403,212
Energy Efficient New Homes	31,018	66,528	106,957	152,766	204,236	561,504
Home Energy Reports	58,226	145,338	145,338	145,338	145,338	639,577
Simple Energy Solutions	14,450	28,969	43,560	58,227	72,976	218,182
Residential Energy Code	TBD	TBD	TBD	TBD	TBD	-
Student Education	8,654	17,309	25,966	34,623	43,281	129,833
On Line Audit	-	-	-	-	-	-
Innovative Energy Solutions	TBD	TBD	TBD	TBD	TBD	-
Energy Design Solutions	TBD	TBD	TBD	TBD	TBD	-
EPA Portfolio Manager	-	-	-	-	-	-
Totals	287,436	611,905	854,618	1,103,185	1,357,896	4,215,040

### 3. Columbia DSM Program Projected Budgets

#### Estimated Annual Budgets, Columbia Gas of Ohio DSM Programs

Program	2012	2013	2014	2015	2016	Totals
Home Performance Solutions	\$ 8,706,469	\$ 9,026,922	\$ 9,275,159	\$ 9,533,076	\$ 9,799,464	\$ 46,341,090
WarmChoice	\$ 4,972,254	\$ 5,334,422	\$ 5,707,454	\$ 6,091,678	\$ 6,487,428	\$ 28,593,236
HE HVAC Rebates	\$ 1,509,931	\$ 1,519,248	\$ 1,528,265	\$ 1,538,100	\$ 1,523,214	\$ 7,618,759
Energy Efficient New Homes	\$ 1,856,717	\$ 1,784,133	\$ 1,767,324	\$ 2,150,776	\$ 2,641,285	\$ 10,200,235
Home Energy Reports	\$ 716,150	\$ 1,192,775	\$ 1,193,625	\$ 1,194,500	\$ 1,195,401	\$ 5,492,451
Simple Energy Solutions	\$ 495,669	\$ 520,535	\$ 530,723	\$ 541,247	\$ 552,118	\$ 2,640,292
Residential Energy Code	\$ 200,000	\$ 125,000	\$ 200,000	\$ 100,000	\$ 100,000	\$ 725,000
Student Education	\$ 415,000	\$ 415,000	\$ 390,000	\$ 405,000	\$ 405,000	\$ 2,030,000
On Line Audit	\$ 140,000	\$ 138,000	\$ 141,090	\$ 144,273	\$ 147,551	\$ 710,914
<b>Subtotal: Residential DSM</b>	<b>\$ 19,012,190</b>	<b>\$ 20,056,035</b>	<b>\$ 20,733,640</b>	<b>\$ 21,698,650</b>	<b>\$ 22,851,462</b>	<b>\$ 104,351,976</b>
<i>Innovative Energy Solutions</i>	\$ 585,000	\$ 585,000	\$ 585,000	\$ 585,000	\$ 585,000	\$ 2,925,000
Energy Design Solutions	\$ 137,171	\$ 143,504	\$ 150,242	\$ 157,183	\$ 164,331	\$ 752,431
EPA Portfolio Manager	\$ 9,168	\$ 9,441	\$ 9,741	\$ 10,025	\$ 10,317	\$ 48,691
<b>Subtotal: Commercial DSM</b>	<b>\$ 731,339</b>	<b>\$ 737,945</b>	<b>\$ 744,983</b>	<b>\$ 752,207</b>	<b>\$ 759,648</b>	<b>\$ 3,726,122</b>
DSM Stakeholder Group Support/DSM Planning	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 350,000
Admin (non-program specific)	\$ 440,000	\$ 451,000	\$ 462,275	\$ 473,832	\$ 485,678	\$ 2,312,785
<b>Total : selected programs</b>	<b>\$ 20,253,529</b>	<b>\$ 21,314,980</b>	<b>\$ 22,010,897</b>	<b>\$ 22,994,689</b>	<b>\$ 24,166,788</b>	<b>\$ 110,740,882</b>
<b>Total Budget</b>	<b>\$ 20,253,529</b>	<b>\$ 21,314,980</b>	<b>\$ 22,010,897</b>	<b>\$ 22,994,689</b>	<b>\$ 24,166,788</b>	<b>\$ 110,740,882</b>

#### 4. Columbia DSM Gas Cost Projections

##### Gas Cost Estimates, Columbia Gas of Ohio DSM Programs

Year Number	Year	Nominal Cost of Gas \$/Mcf
0	2011	\$8.20
1	2012	\$9.26
2	2013	\$9.67
3	2014	\$9.97
4	2015	\$10.13
5	2016	\$10.29
6	2017	\$10.55
7	2018	\$10.81
8	2019	\$11.08
9	2020	\$11.36
10	2021	\$11.65
11	2022	\$11.94
12	2023	\$12.23
13	2024	\$12.54
14	2025	\$12.85
15	2026	\$13.18
16	2027	\$13.50
17	2028	\$13.84
18	2029	\$14.19
19	2030	\$14.54
20	2031	\$14.91
21	2032	\$15.28
22	2033	\$15.66
23	2034	\$16.05
24	2035	\$16.45
25	2036	\$16.87
26	2037	\$17.29
27	2038	\$17.72
28	2039	\$18.16
29	2040	\$18.62
30	2041	\$19.08
31	2042	\$19.56
32	2043	\$20.05
33	2044	\$20.55
34	2045	\$21.06
35	2046	\$21.59

Note: Gas cost based in Columbia estimates through 2015,  
inflation thereafter

Note: Inflation rate, 2.5%