Before the

PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

Docket No. 2009-411-G

ENERGY EFFICIENCY PROGRAM REPORT

June 15, 2012

Piedmont Natural Gas

Piedmont Natural Gas Company, Inc.
Energy Efficiency Programs
South Carolina

Docket No. 2009-411-G

INTRODUCTION

Piedmont Natural Gas Company, Inc. ("Piedmont" or the "Company") respectfully submits this report on the effectiveness of the Company's energy efficiency programs pursuant to the Public Service Commission of South Carolina's ("Commission") May 27, 2010, *Order Approving Energy Efficiency Programs* in Docket 2009-411-G, Order No. 2010-390. This report focuses on Piedmont's energy efficiency programs in effect during the period from April 1, 2011 through March 31, 2012 - Program Year 2.

BACKGROUND

On October 1, 2009, Piedmont filed its Petition for Approval of Energy Efficiency Programs. By a Revised Notice of Filing issued October 15, 2009, the Commission established December 21, 2009 as the deadline for the filing of petitions to intervene and scheduled this matter for hearing on February 11, 2010. On November 12, 2009 Piedmont filed its affidavits that such Notice had been properly published in the appropriate newspapers serving Piedmont's assigned service territory in South Carolina. Further, on December 9, 2009 Piedmont filed a certification of mailing with the Commission certifying that the Notice of Filing and Hearing had been mailed or provided in electronic format to all Piedmont customers in South Carolina.

On December 30, 2009, Piedmont filed the testimony of Steve Lisk supporting the Petition and the proposed Program Procedures. In its Petition, Piedmont submitted for Commission review and approval, three natural gas energy efficiency programs:

1. Customer Education Program - a targeted marketing approach within the Piedmont South Carolina service territory to provide customer energy education, efficiency and conservation messages.

2. Low-Income Energy Efficiency Program - designed to provide energy efficiency measures and weatherization assistance to existing Piedmont low-income residential customers.
3. High-Efficiency Equipment Rebate Program – designed to provide rebates to Piedmont's residential and commercial customers who purchase and install qualifying high efficiency natural gas equipment to replace existing natural gas equipment.

On January 27, 2010, Piedmont and the ORS entered into a Settlement Agreement with respect to Piedmont's program filings. As part of the Settlement Agreement, Piedmont and ORS agreed that Piedmont should be authorized to expend and recover from its South Carolina residential and commercial customers an annual cost of $350,000 for the operation of the three energy efficiency programs. In addition, these programs would be considered experimental in nature and would operate for a period of three years. ORS and Piedmont further agreed that after a period of three years they would jointly or individually submit any proposed modifications to the programs or program expenditures for review and approval of the Commission. Also, as part of the Settlement Agreement, Piedmont agreed to submit to the ORS and the Commission, on an annual basis in conjunction with the Company's Rate Stabilization Act (RSA) process, a request for recovery of Piedmont's Energy Efficiency program costs for the twelve-month period ending March 31st. Finally, the parties agreed that this report would be submitted by June 15th of each year beginning in June, 2011.

The Commission conducted a formal hearing in this matter on February 11, 2010. At the hearing, the Commission received into evidence the testimony of Piedmont witness Steve Lisk and ORS witness Carey M. Stites. The Commission also accepted into evidence the Settlement Agreement.

On May 27, 2010, the Commission issued its Directive approving Piedmont's Energy Efficiency Programs.

On September 16, 2010, Piedmont requested that the Commission approve a modification to its Residential Low-Income Weatherization Program to allow the use of both the Federal

Weatherization Assistance Program standard and the HUD standard in determining whether a residence qualifies as "low-income". This request was approved by the Commission on September 29, 2010.

On December 21, 2010, Piedmont requested that approximately $25,000 of unexpended funds in the Residential Low-Income Program and approximately $40,000 of unexpended funds in the Customer Education Program be reallocated to the High Efficiency Equipment Rebate Program to meet higher than expected demand in the Rebate program. This request was approved by the Commission on January 12, 2011.

On January 3, 2012, Piedmont requested that approximately $50,000 of unexpended funds in the Residential Low-Income Program and approximately $38,000 of unexpended funds in the Customer Education Program be reallocated to the High Efficiency Equipment Rebate Program to meet higher than expected demand in the Rebate program. This request was approved by the Commission on January 18, 2012.

The Company's approved annual budget for energy efficiency programs in South Carolina is $350,000 per year. A summary of Program Year 2 funding is shown in Table 1.

Table 1 – Program Year 2 Funding

	Budgeted Annual Costs	**Actual Expenditures[a]**
Customer Education Program	$50,000	$11,502[b]
Residential Low-Income Program	$150,000	$100,000[c]
High-Efficiency Equipment Rebate Program	$150,000	$232,301
TOTAL	**$350,000**	**$343,803**

a) Represents program expenses recorded between April 1, 2011 and the end of accounting month March 2012.
b) $38,498 of budgeted funds were reallocated from the Customer Education program to the Equipment Rebate program.
c) $50,000 of budgeted funds were reallocated from the Low-Income program to the Equipment Rebate program.

CUSTOMER EDUCATION PROGRAM

Piedmont initially budgeted $50,000 for Program Year 2 to implement a communications campaign focusing on customer energy education, efficiency and conservation messages. Due

to strong customer demand exhibited during Program Year 1 for the Equipment Rebate Program, it was decided to proceed slowly with spending customer education program funding during Program Year 2 in case funds would need to be reallocated to the Equipment Rebate Program. The Equipment Rebate Program during Program Year 2 did need additional funding and on January 3, 2012, Piedmont requested that approximately $38,000 of unexpended funds in the Customer Education Program be reallocated to the High Efficiency Equipment Rebate Program. This request was approved by the Commission on January 18, 2012. Table 2 shows the Customer Education Program expenditures for Program Year 2.

Table 2 – Customer Education Program expenditures in Program Year 2

	Budgeted Annual Costs	**Actual Expenditures** [a]
Customer Education Program	$50,000	$ 11,502 [b]
TOTAL	**$50,000**	**$11,502**[b]

a) Represents program expenses recorded between April 1, 2011 and the end of accounting month March 2012.
b) $38,498 of budgeted funds were reallocated from the Customer Education program to the Equipment Rebate program.

Prior to the reallocation of funds described above, Piedmont designed and distributed several targeted communication products to promote energy efficiency and conservation. Table 3 gives a description of each customer education piece that was administered during Program Year 2[1]. A copy of each customer education piece is shown in Exhibit A.

Table 3 – Customer Education Communication in Program Year 2

Communication Form	**Date Administered**	**Message**
Newspaper Ad	May 2011	Water heating saving energy tips
Bill Insert	June 2011	Saving energy and money with energy efficient appliances
Magazine Ad	July 2011	Water heating saving energy tips
Newspaper Ad	October 2011	Energy saving tips for the winter
Newspaper Ad	November 2011	Energy saving tips for the winter

[1] In addition to these SC customer education materials, there were bill inserts sent out to customers in all service territories. Some of these were recurring annual bill inserts that were not paid for through funds dedicated for the SC Energy Efficiency Program. These bill inserts dealt with Piedmont's energy saving on-line tools, cold weather energy saving tips and saving money with natural gas water heaters.

For Program Year 3, the Company is still planning to budget a total of $50,000 for customer education. However, as Program Year 3 progresses, the Company will continue to monitor the demand and funding status of the Equipment Rebate Program to determine if there is a need to reallocate any additional Customer Education Program funding into the Equipment Rebate program.

RESIDENTIAL LOW-INCOME ENERGY EFFICIENCY PROGRAM

The primary purpose of this program is to provide energy efficiency measures and weatherization assistance, through a third-party, to low-income residential customers in Piedmont's service territory. The program is intended to create a more energy efficient and comfortable home environment for the customers served. In addition to the actual energy savings, there can be additional benefits to the low-income customer including improved health and safety, and increased comfort.

The target population for this program is low-income customers dwelling in single-family homes that are served under Piedmont's residential rate schedules (Rate Schedules 201 and 221). For the purposes of this program, Piedmont considers a customer to be "low-income" based on guidelines established for the Federal Weatherization Assistance Program or by the United States Department of Housing and Urban Development ("HUD"). When applicable, priority is placed on providing assistance to those eligible elderly individuals with disabilities and eligible families with children.

The primary energy efficiency measures provided to each program participant are based on a comprehensive in-home energy audit. The measures offered and performed for program participants may include:

- Sealing major air leaks in floors and ceilings (penetrations, bypasses, chases)
- Insulating attic, side wall, and/or floors
- Sealing and insulating ducts
- Installing programmable/setback thermostat
- Evaluating, cleaning and tuning heating systems
- Installing general heat waste measures (furnace filters, water heater insulation wrap, piping insulation, water-saving devices, and weather-stripping)

The energy contractor decides, primarily guided by the results of the in-home energy audit, which energy saving measures to install at the participant's home. The energy audit helps the energy contractor determine which energy saving measures would provide the greatest benefit to the participant. Due to safety concerns, a carbon monoxide detector is installed inside the participant's home if one is not currently installed.

Piedmont is currently working with two different organizations to administer the Low-Income Program. Piedmont has been able to leverage our funding with these organizations since they were already involved with the weatherization of low-income homes in Piedmont's service territory. Specifically, Piedmont is working with the Furman University Community Conservation Corps ("Furman CCC") in the Greenville area and with Piedmont Community Actions ("PCA") in Spartanburg and Cherokee counties. Piedmont provided $50,000 in program funding to the Furman CCC program and $50,000 to the PCA program. During Program year 1, Piedmont was not able to get started working with these two organizations as quickly as initially anticipated due to filing changes to the program income guidelines, some scheduling conflicts and also the time required to complete the contractual agreements. This delay also pushed back the funding start dates for Program Year 2. The Furman CCC and PCA are both still working from Program Year 2 funding. Furman CCC did not receive funding for Program Year 2 until November 2011. PCA did not receive funding for Program year 2 until February 2012 and this was because they were still utilizing Program Year 1 funding through December 2011. Table 4 summarizes the Low-Income Program expenditures.

Table 4 – Low-Income Program expenditures in Program Year 2

	Estimated Annual Costs	**Actual Expenditures[a]**
Low-Income Program	$150,000	$ 100,000[b]
TOTAL	**$150,000**	**$100,000[b]**

a) Represents program expenses recorded between April 1, 2011 and the end of accounting month March 2012.
b) $50,000 of budgeted funds was reallocated from the Low-Income program to the Equipment Rebate program.

Table 5 shows the program status (as of May 15, 2012) for each organization and reflects both Program Year 1 and Program Year 2.

Table 5 – Low-Income program status

	Furman CCC	**Piedmont Community Actions**
Counties Served	Greenville	Spartanburg Cherokee
Program Year 1 - Status	This program year funding is depleted. Completed 11 homes through the program. This included funding for (2) furnace replacements where a cracked heat exchanger was found to be unsafe to the homeowners.	This program year funding is depleted. Completed 43 homes through the program. PCA was able to leverage Piedmont's funding with their Federal Weatherization Assistance Program funding to reduce Piedmont's funding used per home.
Program Year 2 - Status	Furman CCC is still working on weatherizing homes in this program but so far completed almost 11 homes and has 1-2 homes waiting to be audited and weatherized.	PCA has been finishing homes under the Federal WAP program funding and has recently started working on utilizing Piedmont's funding. This program is still in progress.

The overall vision of the Furman CCC is to promote financial and environmental stability within a safe, quality living environment for all individuals in need. Piedmont's funding has allowed the Furman CCC to continue their program and has helped students get involved in activities where they are able to give back to the community. The CCC is a partnership among Furman University's Heller Service Corps, Furman's Community Relations Department, Furman's Shi Center for Sustainability, the City of Greenville, the Greenville County Redevelopment Authority, and the United Way of Greenville County, along with other stakeholders, to provide home weatherization and education services to Greenville residents who qualify for assistance. Two AmeriCorps members, supported through the United Way of Greenville and Furman University, administer the program. Through this partnership, Furman students, under the guidance of the AmeriCorps members and weatherization professionals, provide education to homeowners, as well as weatherization services for homes which meet the guidelines for qualification.

The Furman CCC spends some of their time developing an outreach strategy to recruit homeowners for the weatherization assistance program. They attend neighborhood association

meetings that are in low-income areas to share information with residents about the program. The Furman CCC works with other local agencies to promote the program and they also list information about the program on the Furman website (www.furman.edu/ccc). They work with Furman's Marketing and Public Relations department to design door hangers to market the program and look at other outreach events in the local community.

After eligible participants are identified for the program, the Furman CCC has the participant fill out an application form and then it is reviewed to verify the income level and confirm they are a Piedmont customer. If the homeowner is qualified for the program, a pre-weatherization meeting is scheduled with the homeowner to go over the process and answer any questions about the program. The Furman CCC then utilizes an experienced energy auditing company to administer the home energy audit and determine what type of energy efficiency improvements can be performed on the home. The energy auditor also identifies any unsafe conditions. After each completed home, the resident receives information about how to further reduce their energy usage and is also provided with some energy saving tips. After energy improvement needs are addressed, the Furman CCC primarily works with local energy contractors to complete the work. In some cases, they attempt to incorporate student volunteers to help out with the energy efficiency improvements, but this depends upon the number of volunteers and the availability of scheduling with the homeowner.

In the Spartanburg/Cherokee area, Piedmont's funding is being used to help leverage existing Federal Weatherization Assistance Program ("Federal WAP") funds that are being administered through Piedmont Community Actions. The Weatherization Assistance Program for SC is run through the SC Office of Economic Development. The Weatherization Assistance Program for each of the state's 46 counties is coordinated through 14 community organizations that administer both the Federal WAP program (which is paid through the annual Federal WAP funding) and also the WAP program that is paid through SC AARA funding. PCA has been administering the Federal WAP in Spartanburg and Cherokee counties for over 20 years. Piedmont worked with PCA to identify specific energy efficiency improvements for which Piedmont's funding could be used, and thus Piedmont's funding helps supplement work that PCA is doing under the Federal WAP.

Additional information about the Furman CCC program is shown in Exhibit B. Piedmont plans to continue working with the Furman CCC and PCA in Program Year 3.

HIGH EFFICIENCY EQUIPMENT REBATE PROGRAM

This program provides rebates to Piedmont's residential and commercial customers who purchase and install qualifying high efficiency natural gas equipment. The residential rebates apply to high efficiency water and space heating equipment, since water heating and space heating constitutes a large portion of residential energy usage. Commercial customers are offered a rebate on the purchase and installation of a high efficiency tankless water heater.

This program enables customers to offset some of the higher cost of choosing a more efficient piece of equipment. This program is intended to help influence a customer to choose a more energy efficient piece of equipment. An upgrade to a higher efficiency water heater or furnace, given consistent usage patterns, will help the program participant achieve recognizable energy savings. The extent of the energy savings will vary for each participant, depending on a variety of factors including their current energy efficiency. Tables 6 and 7 summarize the equipment rebates that are offered and the corresponding equipment efficiency requirements.

Table 6 – Residential Equipment Rebate Summary

	Rebate Amount	Minimum Required Efficiency[a]
Natural Gas Storage Tank Water Heater	$ 50	EF = 0.62 (or higher)
Natural Gas Tankless Water Heater	$ 250	EF = 0.82 (or higher)
Natural Gas Forced Air Furnace	$ 300	AFUE = 90% (or higher)

a) EF is the Energy Factor; AFUE is the Annual Fuel Utilization Efficiency

Table 7 – Commercial Equipment Rebate Summary

	Rebate Amount	Minimum Required Efficiency[a]
Natural Gas Tankless Water Heater	$ 250	EF = 0.82 (or higher)

a) EF is the Energy Factor

This program is available to customers under Piedmont's residential rate schedules (Rate Schedules 201 and 221) and commercial rate schedules (Rate Schedules 202, 232, 252 and

262). Each customer is required to submit a rebate application, along with proof of purchase and installation of the qualifying equipment. Upon approval of the application, the rebate check is mailed to the customer. In addition, each rebate recipient receives an energy efficiency kit that includes items to help further reduce their natural gas energy usage. The energy efficiency kit includes the following:

- (1) Low-flow showerhead
- (1) Low-flow kitchen aerator
- (2) Low-flow faucet aerators
- (2) Weatherstripping rolls
- Thank you letter, energy conservation tips, water saving tips

Piedmont has received positive program feedback from our customers, as well as from the contractors who have used this program to encourage the purchase of high-efficiency natural gas equipment.

To ensure compliance with its eligibility criteria, Piedmont verifies that each rebate applicant is indeed a Piedmont customer and confirms that the installed equipment model meets all the program equipment efficiency criteria. For Program Year 2, there were 651 eligible rebate applications that were processed and an additional 19 rebate applications that were determined to be ineligible. For each ineligible application, a letter was mailed to the applicant with an explanation of why the rebate application was deemed ineligible.

Table 8 shows the number of approved rebate applications, by customer sector:

Table 8 – Number of approved rebate applications in Program Year 2

Residential Rebate Applications	649
Commercial Rebate Applications	2
TOTAL	**651**

Table 9 shows the equipment installation count associated with the Program Year 2 rebate funds. Because some customers installed multiple pieces of equipment at their service address, the number of equipment installations exceeds the number of approved rebate applications.

Table 9 – Equipment installed per approved rebate applications in Program Year 2

	Storage Water Heater (EF = 0.62 or higher)	**Tankless Water Heater** (EF = 0.82 or higher)	**Forced Air Furnace** (AFUE = 90% or higher)	**TOTAL**
Residential Equipment Installed	2	89	609	**700**
Commercial Equipment Installed	N/A	4	N/A	**4**
Total	**2**	**93**	**609**	**704**

Table 10 shows the Equipment Rebate program expenditures for Program Year 2. The original $150,000 program budget was supplemented with an additional $88,498, which was part of the reallocation of approximately $50,000 of unexpended funds from the Residential Low-Income Program and approximately $38,000 of unexpended funds from the Customer Education Program, as approved by the Commission on January 18, 2012.

Table 10 – Equipment Rebate Program expenditures in Program Year 2

	Budgeted Annual Costs	**Actual Expenditures**[a]
Program Development and Administration	$12,500	$ 3,635
Communications	$10,000	$ 10,497
Rebate Incentives	$112,500	$117,552
Reallocated funds used for additional Rebate Incentives		$88,498[b]
Evaluation, Measurement & Verification	$ 15,000	$ 12,119
TOTAL	**$150,000**	**$ 232,301**

a) Represents program expenses recorded between April 1, 2011 and the end of accounting month March 2012.
b) Approved reallocated funding from the Customer Education and Low-Income program

For the Program Year 1 analysis, Piedmont worked with an energy consultant to determine the achieved energy savings for the residential participants. Based on funding limitations, Piedmont is using the same achieved energy saving values for Program Year 2. Since there were not enough commercial installations to perform an accurate statistical analysis of the achieved energy savings, the initial deemed savings value is being used as a proxy for the achieved energy savings. For the residential analysis, the consultant reviewed Piedmont's initial deemed savings and performed a billing analysis of the customers' installed equipment. The consultant used a per-heating-degree-day modeling approach since there were limited numbers of 12-months post data due to the timing of the analysis. Table 11 shows the savings per residential customer that is being used for the Program Year 2 analysis.

Table 11 – Deemed and Billing Analysis Gross Savings per Residential Customer

Measure	**Original Deemed Annual Savings[a] (Therms)**	**Billing Analysis Annual Savings[b] (Therms)**
Residential Storage Water Heaters (EF=0.62 or higher)	12.6	12.6[c]
Residential Tankless Water Heaters (EF=0.82 or higher)	72.9	43
Residential Furnace (AFUE = 90% or higher)	81	110

a) Deemed Savings is the measure-level savings values as utilized in Piedmont's original program planning analysis. Deemed savings were determined by estimating the energy savings based on a baseline efficiency for each piece of equipment.
b) Billing Analysis is the measure-level savings values estimated by the energy consultant. This analysis looked at the customer's energy consumption, average heating degree days, and the average daily energy savings. This complex model used a weighted approach to compensate for any missing pre and post-installation consumption data.
c) Due to the low number of installed storage water heaters, there was not enough data to analyze the storage water heater energy savings; the initial deemed savings value was used a proxy for the achieved annual savings.

Table 12 represents the annual energy saving comparisons based on the initial deemed energy savings and the achieved energy savings. The total deemed annual savings shown is based on the original estimated number of participants and the original deemed savings values, including both the residential and commercial customers. The total annual savings is based on the actual number of installations shown in Table 9 (including installations from reallocated funds) and

the savings based on the billing analysis, including both the residential and commercial customers.

Table 12 – Total Program Annual Energy Savings

Measure	Original Deemed Total Annual Savings (Therms)	Total Achieved Annual Savings per Billing Analysis (Therms)
Storage Water Heaters (EF=0.62 or higher)	315	25
Tankless Water Heaters[a] (EF=0.82 or higher)	13,231	4,236
Furnace (AFUE = 90% or higher)	13,300	66,990
Sub-Total	**26,846**	**71,251**
Weatherization Kits Mailed Out[b] (Residential Only)	12,390	5,806
TOTAL	**39,236**	**77,057**

a) Includes both residential and commercial installations.
b) For the achieved annual savings, assuming 50% installed and achieved savings of 50% of deemed savings.

The total dollar savings and average savings per customer were calculated using the achieved energy savings, the number of equipment rebates issued, and the average SC rates during Program Year 2. There were not enough commercial installations to get an accurate analysis so the original commercial deemed savings were utilized. This is shown in Table 13.

Table 13 – Total Rebate Program Annual Dollar Savings[a]

	Average Annual Dollar Savings per Customer	**Total Annual Dollar Savings**
Residential	$ 109.10	$ 70,805.61
Commercial	$ 168.62	$ 337.24
TOTAL	**$ 109.28[b]**	**$ 71,142.85**

a) The dollar savings were calculated by using the average SC residential/commercial rates for Program Year 2. This is based on the weighted average of the actual number of customers per rate class.
b) Average total annual dollar savings per customer based on the total annual dollar savings divided by the total number of residential and commercial customers.

Piedmont worked with an energy consultant to determine the cost-effectiveness testing and the consultant analyzed the data based on the number of equipment rebates issued in Program Year 2 and the analyzed energy savings per measure.

The energy consultant used the tests as defined by the California Standard Practice Manual to evaluate the cost-effectiveness of this program. This analysis of program costs and benefits included the following:

- Total Resource Cost Test (TRC): This test examined the program benefits and costs from the perspectives of Piedmont and its customers. Benefits included fuel cost reductions, and costs included those incurred by Piedmont and the program participants.

- Utility Cost Test (UCT): This test examined the program benefits and costs from Piedmont's perspective. Benefits are in the form of reduced fuel costs while costs included any incurred administrative, measure, or incentives costs. This test is also commonly referred to as the Program Administrator Cost Test.

- Participant Cost Test (PCT): This test examined the benefits from a program participant perspective. Costs included any measure costs incurred by the participants. Benefits included rebates paid by Piedmont and bill reductions due to implementing the efficiency measures.

The energy consultant evaluated the cost-effectiveness testing at a program level for the Equipment Rebate program and the results were calculated by analyzing the planning avoided gas costs and also the program year avoided gas costs. For the main tests, the TRC and the UCT, the results were greater than 1.0 which signifies that the program is considered cost-effective. The achieved energy analysis savings are shown as a ratio of the program benefits to program costs. The results are shown in Table 14.

Table 14 – Equipment Rebate Program Cost-Effectiveness Results for Program Year 2

Test	**Achieved Energy Analysis Savings** (Planning Avoided Costs)	**Achieved Energy Analysis Savings** (Program Year Avoided Costs)
Total Resource Test (TRC)	2.19	1.29
Utility Cost Test (UCT)	2.94	1.72
Participant Cost Test (PCT)	2.08	2.08

EXHIBIT A

SAVE ENERGY and money with these WATER HEATING TIPS!

DID YOU KNOW?

Water heating is the third largest energy expense in your home!

Water heating tips from Piedmont Natural Gas:

- Upgrade your old natural gas water heater to a new high-efficiency model with an Energy Factor of up to 0.97
- Install a low-flow faucet and showerhead to reduce your water flow by as much as 50 percent

For more helpful information about saving energy please visit us at **www.piedmontng.com** or you can also check out: **www.energysavers.gov**.

ENERGY STAR PARTNER

Piedmont Natural Gas

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choosing energy efficient appliances can SAVE YOU MONEY!

DID YOU KNOW?

Your household appliances account for nearly **15 percent** of your home's energy usage!

HERE ARE SOME TIPS FOR REDUCING YOUR HOME ENERGY BILL

- Always consider buying ENERGY STAR rated appliances
- Always check the EnergyGuide label on appliances to see how much energy they use; the more energy they use, the more they will cost to operate
- Look for features that reduce water usage when choosing a dishwasher or clothes washer; this can help cut down on the amount of energy your water heater uses
- Only run your dishwasher and clothes washer with full loads

For more helpful information about saving energy please visit us at **www.piedmontng.com** or you can also check out: **www.energysavers.gov**.

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DID YOU KNOW?

Water heating is the third largest energy expense in your home!

Water heating tips from Piedmont Natural Gas:

- Upgrade your old natural gas water heater to a new high-efficiency model with an Energy Factor of up to 0.97
- If you're purchasing a new dishwasher or clothes washer, be sure it's ENERGY STAR rated
- Install a low-flow faucet and showerhead to reduce your water flow by as much as 50 percent

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GET READY TO SAVE ENERGY during the winter months

- Have your heating system inspected each year by a qualified professional to ensure it is working properly
- Change or clean your furnace filters each month during the heating season
- Upgrade your old furnace to a new high-efficiency model (Newer models can be up to 98% efficient!)
- Install a programmable thermostat to maximize your energy savings
- Seal leaks around doors and windows with caulk or weather-stripping to reduce unwanted drafts

For more helpful information about saving energy please visit us at **piedmontng.com** or you can also check out: **energysavers.gov**.

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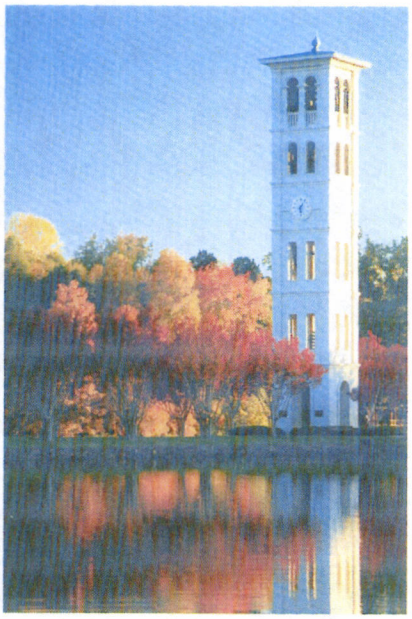
EXHIBIT B

FURMAN UNIVERSITY

Community Conservation Corps
Annual Report | August 2011



OVERVIEW

The Community Conservation Corps (CCC) at Furman University provides low- and fixed-income homeowners with housing modifications and education, thereby promoting energy efficiency and financial savings. Benefits are divided into four key areas:

- **Financial stability.** Reducing energy costs each month allows residents more flexibility with their budgets.
- **Energy efficiency.** Using less from power sources means fewer greenhouse gas emissions and less waste of resources.
- **Safety.** All homes weatherized receive carbon monoxide detectors and smoke alarms as needed. Homes are also thoroughly inspected for gas leaks and other potentially life-threatening hazards.
- **Community building.** Volunteers from Furman and AmeriCorps assist contractors in performing energy-saving repairs while building relationships with homeowners and other community stakeholders.

HISTORY

South Carolina has one of the highest percentages of individuals and families living below the poverty level and ranks 18th in the United States in percentage of residential energy used per capita. In 2001, South Carolina residents spent the equivalent of $2,430 per person on energy expenditures. With an average per capita personal income of $24,840, this presents a substantial economic impact (South Carolina Statistical Profile, 2005).

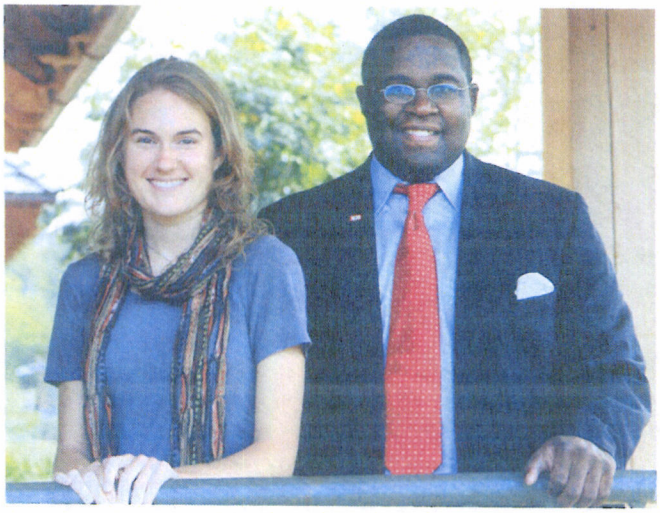
According to a report by the U.S. Department of Energy, the average energy burden of low-income households is four times that of other households. Residents who can least afford high utility bills pay more because they often live in older and less efficient homes.

The CCC was formed during a pilot project in which 75 Furman students weatherized five homes in April 2010. Furman's Shi Center for Sustainability, Community Relations department, and Heller Service Corps worked with the City of Greenville's Community Development Office to identify homes, and the City provided contractor support and materials.

Volunteers install a clean air filter.

In August 2010, the United Way of Greenville County's Corps United Program provided Furman with two AmeriCorps members to continue the Community Conservation Corps efforts. Rick Harris '10 and Jenn Guinter '10 (pictured below) served as the coordinators of the CCC from August 2010 through August 2011. Laura Kate Steadman and Kam Hovarth '11 will serve with the CCC from August 2011 to August 2012.

To support weatherization efforts, the CCC received a $50,000 grant from Piedmont Natural Gas in October 2010.



HOW WEATHERIZATION WORKS

Weatherization is divided into three focus areas: energy audits, weatherization, and post-weatherization energy savings.

Energy Audits

Audits are performed on each home before and after weatherization. Each audit utilizes technology such as a blower door, gas sniffer, and standardized measurement to ensure quality. Audits are performed by Building Performance Institute (BPI) certified auditors.

- The pre-weatherization audit is performed to determine which areas of the house would benefit the most from weatherization and to gather quantitative measurements of air infiltration.

- The post-weatherization audit is performed to ensure that all identified problems have been addressed and to quantitatively measure the decrease in air infiltration.

Contractor Pauline Medford of Carolina Energy Savers describes how a blower door quantitatively measures air infiltration.

Weatherization

Home repairs are primarily performed by a contracting group that specializes in energy efficiency, aided by volunteers. Common home modifications include insulation, caulking, weather stripping, duct sealing, attic sealing, programmable thermostats, hot water heater blankets, and more.

Caulking is one way in which volunteers improve the home's energy efficiency.

Energy Savings

In order to receive weatherization, clients must supply a copy of the past year's utility bills. This is to provide the CCC with a map of the home's average energy usage. Following completion of the home, CCC associates check in with clients every three months for a year to gather energy usage data post-weatherization to calculate energy and financial savings.

VOLUNTEER SERVICE

Volunteers are utilized in weatherization as much as safely possible. Volunteers learn valuable skills through service that they can use to make their own homes more efficient. All volunteers are provided with safety materials such as coveralls, goggles, and masks. To date, 160 volunteers have served with the CCC providing weatherization and educational support.

RESULTS

From April 2010 to July 2011, the CCC weatherized 11 homes with an additional two homes nearing completion. The CCC is continuing to receive applications for weatherization. Homes have each received an average of $4000 in materials and services for life-changing energy improvements.

Weatherized homes save an estimated 35 percent on utility bills, with financial savings averaging $400 or more in the first year alone (U.S. Department of Energy, 2011). The CCC is continuously gathering data on financial and energy savings. Further information is available on the CCC's website at www.furman.edu/ccc.

SUPPORT

Special thanks to the following organizations that have made the CCC possible:

Piedmont Natural Gas
United Way of Greenville County
AmeriCorps
Max Building Performance, LLC
Carolina Energy Savers, LLC
City of Greenville
Sunbelt Human Advancement Resources, Inc. (SHARE)

To learn more, visit www.furman.edu/ccc

Furman University

Furman University is one of the nation's premier undergraduate liberal arts colleges. The university offers outstanding academics, opportunities for a broad range of talented students with a passion for learning, a robust visual and performing arts program, and competitive NCAA Division I athletics. Our campus in Greenville, South Carolina, is nationally acclaimed for its beauty, and the residential student body of 2,700 is the ideal size to enhance scholarly activity, personal growth, and leadership development.

FURMAN

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Academics

David E. Shi Center for Sustainability

Community Conservation Corps at Furman University

What is weatherization?

Weatherization consists of home modifications that will make a home more energy efficient and better able to stand up to the elements, therefore saving the homeowner on energy bills. Examples of weatherization measures include weather stripping around doors and windows, water heater blankets, insulation, and more, all depending on the needs of the home.

Our mission is to provide home weatherization and education in order to reduce energy usage and costs to promote financial savings.

Volunteers
Find information on how to sign up and upcoming events.

Homeowners
Apply to have your home weatherized and see what is involved.

About Us
The Community Conservation Corps is made possible through organizations and individuals working together with a greater Greenville in mind.

Printable .pdf flyer

About the Community Conservation Corps

In the Fall of 2010, United Way of Greenville County created grant-funded program with positions for 27 AmeriCorps members throughout the Greenville area. The member serve in various projects with the mission of financial stability. Two of the AmeriCorps members are currently housed at the David E. Shi Center for Sustainability at Furman University and serve the Community Conservation Corps. The two current member of the CCC are Kam Horvath '11 and Laura Kate Steadman.

Kam graduated from Furman in 2011 with a degree in Finance. Laura Kate graduated from Warren Wilson College in 2011 with a degree with Environmental Studies. By joining the CCC Kam and Laura Kate are able to promote energy conservation, environmental awareness, and to make an impact in their local community.

The mission of the Community Conservation Corps is to promote financial savings through energy efficiency and education. We estimate that we can provide residents savings of at least 30% on energy bills. We will perform any services a client's home may need, such as added or new insulation, weather stripping, safety checks on combustion appliances, and more all free of charge. Certified home energy auditors will quickly determine a home's needs based upon an energy audit using advanced tools such as a blower door.

Thank you to all of the organizations that have helped in making the Community Conservation Corps possible. Training to faculty advisor provided by Insulate! at Warren Wilson College. A special thanks to the following organizations:

- Piedmont Natural Gas
- Furman University
- United Way of Greenville County
- AmeriCorps
- Max Building Performance, LLC
- Carolina Energy Savers, LLC
- City of Greenville
- Sunbelt Human Advancement Resources, Inc. (Share)

United Way
United Way of Greenville County

FURMAN

AMERICORPS

Volunteers: How to Get Started

Thank you for your interest in serving the Greenville community. With your help, homeowners can save both precious income and energy. We have a number of ways that individuals can volunteer, ranging from supervised basic construction to event planning to educating others on energy efficiency.

You do not have to be a Furman student in order to volunteer. We encourage any Greenville resident to participate and learn more about the financial benefits of greener living.

Waivers - print, sign, and return these to the David E. Shi Center for Sustainability prior to participation. Once you have signed them, you do not have to sign them again for the rest of the semester.

Want to go above and beyond? Want to develop leadership skills? Just want to learn a little bit more about weatherization? If you answered yes to any of these, then let us know! We can make it happen.

You can **download a .pdf flyer** to share.
To sign up, ask a question, or share a comment, please contact us:

ccc@furman.edu | (864) 294-2512 (864) 294-3680

Homeowners

Owning a home can be challenging. Paying for energy bills, mortgages, and physical maintenance can leave homeowners in a difficult financial situation. That's why the Community Conservation Corps provides a free, preventative service to decrease energy bills and make homes safer. Each home is thoroughly checked by an auditor using highly accurate tools in order to quickly identify what it may need. A construction crew assisted by volunteers from Furman and AmeriCorps perform the weatherization retrofits.

In order to receive weatherization assistance from the CCC, residents must:

- own their home
- agree to a pre- and post-home audit
- be willing to share energy bill data (both electric and natural gas, if applicable)
- fall at or below the following income guidelines

Number in Household	Annual Income
1	$32,700
2	$37,350
3	$42,000
4	$46,650
5	$50,400
6	$54,150
7	$57,850

Why Weatherize?

Conserving energy ultimately reduces household energy bills. Energy-saving modifications to a home can save residents hundreds of dollars per year. The CCC can help weatherize your home.

The mission of the Community Conservation Corps at Furman is to promote financial savings through reduced energy bills and to educate homeowners on energy-saving measures.

How to Apply

Simply call one of the CCC Associates listed below to start the application process.

Or visit us at http://www.furman.edu/ccc print an application for weatherization. Once complete, mail or deliver to the following address:

Community Conservation Corps
David E. Shi Center for Sustainability
3300 Poinsett Highway
Greenville, SC 29613

After verifying homeownership, a CCC Associate will call to schedule a free home energy audit.

For more information, visit:
http://www.furman.edu/ccc

United Way of Greenville County

FURMAN

Rick Harris
Furman CCC Associate
(864) 294-3680 • rick.harris@furman.edu

Jennifer Guinter
Furman CCC Associate
(864) 294-2512 • jenn.guinter@furman.edu

weatherize, revitalize, stabilize

Community Conservation Corps at Furman University

Weatherize

When the CCC weatherizes a home, a small group of student volunteers, a contractor, and a site manager will work together, giving thorough attention to education, prevention, and homeowner needs.

Types of assistance include but are not limited to:

- Insulation
- Weather stripping
- Water heater blankets
- Changing air filters
- Energy-efficient lighting
- Checking combustion appliances

Revitalize

In order to receive weatherization assistance from the CCC at no cost, residents must:

- own their home
- agree to a pre- and post-home audit
- be current Piedmont Natural Gas customers willing to share energy bills.
- fall at or below the following income guidelines

Number in Household	Annual Income
1	$32,500
2	$37,150
3	$41,800
4	$46,400
5	$50,150
6	$53,850
7	$57,550
8	$61,250

Source: U.S. Department of Housing and Urban Development, May 2010

Certified auditors use electronic devices to determine areas of the house that need sealing or repairing. Tools like blower doors help quickly and efficiently pinpoint where air is leaking in a home.

Certified contractors also assist in determining what work Furman student volunteers are able to do and what the construction crew will do.

Free carbon monoxide detectors are installed in every weatherized home.

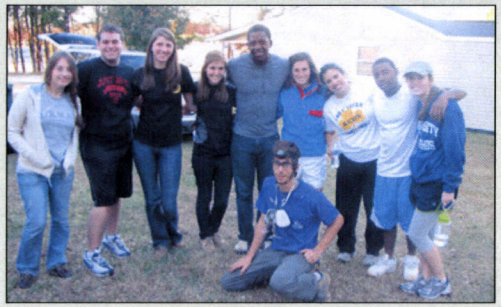
Statement of Inclusion

The Furman CCC values and operates by a policy of inclusion, providing equal opportunity to all persons regardless of race, color, religion, age, national origin, marital status, sexual orientation, gender identity, and/or disability.

Stabilize

Home modifications are an excellent start to saving money and energy, but changing day-to-day behavior makes just as much of a difference.

- Change air filters at least every three months.
- Wash and dry full loads of laundry, and hang clothes to dry when possible.
- Clean out dryer lint after each load.
- Turn out the lights after leaving a room.
- Turn off the computer and TV when not in use.
- Set water heaters to 120°F
- Know what products draw power even when not in use, such as DVD players, computers, printers, and micro-waves. Attach these to power cords that can be turned off at night for maximum efficiency.



CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the attached *Energy Efficiency Program Report* is being served this date electronically and via UPS Overnight upon:

Jeffrey M. Nelson
Shannon B. Hudson
Office of Regulatory Staff
1401 Main Street
Suite 900
Columbia, South Carolina 29201
jnelson@regstaff.sc.gov
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And that a copy of the attached *Energy Efficiency Program Report* is being served this date electronically or via U.S. Mail upon:

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Spartanburg, SC 29301-5241

This the 15th day of June, 2012.

s/ James H. Jeffries IV
James H. Jeffries IV