

**PHILADELPHIA GAS WORKS**  
**FIVE YEAR ENERGYSense DEMAND SIDE MANAGEMENT**  
**PORTFOLIO**

**SECOND YEAR IMPLEMENTATION PLAN**  
**FISCAL YEAR 2012**

**APRIL 29, 2011**

# **CONTENTS**

<b><u>PORTFOLIO IMPLEMENTATION PLAN .....</u></b>	<b><u>3</u></b>
A. INTRODUCTION .....	3
B. PLAN DEVELOPMENT PROCESS .....	4
C. SUMMARY OF COSTS, BENEFITS, AND IMPACTS .....	7
D. PORTFOLIO STRUCTURE .....	17
E. IMPLEMENTATION SCHEDULE .....	20
F. COORDINATION ACTIVITIES.....	21
G. EVALUATION, MONITORING, AND VERIFICATION .....	22
H. KEY ASSUMPTIONS .....	26
I. COST RECOVERY MECHANISM AND ACTUAL EXPENDITURES .....	28
<b><u>PLANS FOR CURRENT PROGRAMS .....</u></b>	<b><u>30</u></b>
A. ENHANCED LOW INCOME RETROFIT PROGRAM.....	30
B. RESIDENTIAL HEATING EQUIPMENT REBATES PROGRAM.....	38
<b><u>PLANS FOR PROGRAMS LAUNCHING IN FY 2012.....</u></b>	<b><u>49</u></b>
A. COMMERCIAL AND INDUSTRIAL RETROFIT INCENTIVES PROGRAM.....	49
<b><u>PLANS FOR PROGRAMS LAUNCHING IN FY 2013 TO FY 2015.....</u></b>	<b><u>59</u></b>
A. COMMERCIAL AND INDUSTRIAL EQUIPMENT REBATES PROGRAM.....	59
B. HIGH EFFICIENCY CONSTRUCTION INCENTIVES PROGRAM .....	61
C. COMPREHENSIVE RESIDENTIAL RETROFIT INCENTIVES PROGRAM .....	62
<b><u>APPENDICES .....</u></b>	<b><u>63</u></b>
A. TABLE OF AVOIDED COSTS .....	63
B. LIST OF ACRONYMS .....	64
C. UNITS .....	65
D. ORGANIZATION CHART .....	66
E. FIVE-YEAR PORTFOLIO PROJECTION TABLES .....	67
F. PROJECTED JOB CREATION.....	69
G. IMPACT EVALUATION SCHEDULE .....	70
H. TECHNICAL REFERENCE MANUAL.....	71
I. ELIRP CONTRACTOR SCREENSHOTS.....	72

# PORTFOLIO IMPLEMENTATION PLAN

## ***A. Introduction***

The Second Year Implementation Plan (“Plan”) describes the processes and steps that Philadelphia Gas Work (PGW or “Company”) will take to implement the second year (FY 2012<sup>1</sup>) of its EnergySense Demand-Side Management Portfolio (DSM Portfolio) outlined in the “Five-Year Gas Demand-Side Management Plan” submitted to the Pennsylvania Public Utility Commission (the Commission) on December 18, 2009, modified in certain respects by the Joint Petition for Settlement (“Settlement”) submitted to the PUC on May 12, 2010 and approved by the Commission by order entered on July 29, 2010. This plan also provides an update on the progress to date in FY 2011 for the Company’s DSM Portfolio. In addition, this plan provides more limited information on the planned implementation activities during the remaining three years of PGW’s DSM Portfolio because, this plan will continue to serve as a template for PGW’s future annual reporting and planning (further detail on this issue can be found in the “Overview of Data Management, Reporting, Planning, and Evaluation” section of this document).

PGW’s DSM Portfolio has five broad goals:

- Reduce customer bills
- Maximize customer value
- Contribute to the fulfillment of the City’s sustainability plan.
- Reduce PGW cash flow requirements
- Help the Commonwealth and the City of Philadelphia reduce greenhouse gas emissions

To achieve these goals, PGW will undertake the following activities during the second year of the DSM Portfolio:

- Continue to develop the infrastructure required to scale up the DSM portfolio
- Continue to ramp up the new Enhanced Low Income Retrofit Program (ELIRP) program and achieve aggressive savings targets by focusing on furnace replacements in addition to the services currently supplied by the CWP.

---

<sup>1</sup> PGW’s Fiscal Year 2012 begins September 1<sup>st</sup>, 2011 and goes until August 31<sup>st</sup>, 2012

- Continue to ramp up the new Residential Heating Equipment Rebate Program<sup>2</sup> (RHER).
- Design and launch the Commercial and Industrial Retrofit Incentives Program<sup>3</sup> (CIRI) with an initial focus on multi-family buildings.
- Design the Commercial and Industrial Equipment Rebates Program<sup>4</sup> (CIER), utilizing a structure similar to the RHER, but targeting high efficiency natural gas equipment used in the commercial and industrial markets.
- Design the High Efficiency Construction Incentives Program<sup>5</sup> (HECI) to deliver services similar to the CIRI, with a focus on new construction in the residential and commercial markets.
- Design the Comprehensive Residential Retrofit Incentives Program<sup>6</sup> (CRRI) in order to offer non-low income, residential customers comprehensive natural gas energy efficiency retrofits.
- Issue the first Annual Report for the DSM portfolio, covering FY 2011

## ***B. Plan Development Process***

Over the past year, PGW has continued to refine program details as the new DSM programs were developed and rolled out. The Plan updates information provided in the First Year Implementation Plan, outlines progress that has been made to date in FY 2011, and provides details on programs that are scheduled to begin in FY 2012.

The following material changes were made to PGW's DSM Plan to develop this Second Year Implementation Plan and to ensure compliance with the approved settlement. Additional details are provided in the relevant sections of the Plan.

### General

---

<sup>2</sup> Previously referred to as the Premium Efficiency Heating Equipment Program (PEHEP)

<sup>3</sup> Previously referred to as the Commercial Industrial Retrofit Program (CIRP)

<sup>4</sup> Previously referred to as the Premium Efficiency Commercial/Industrial Equipment Program (PECIEP)

<sup>5</sup> Previously referred to as the High Efficiency Construction Program (HECP)

<sup>6</sup> Previously referred to as the Comprehensive Residential Heating Retrofit Program (CRHRP)

- Program spending for FY 2012 was adjusted to align with the cap of 1% of PGW's total projected gross intrastate operating revenues, in accordance with the Settlement.
- Avoided costs for natural gas were updated, reflecting a significant decrease in value from previous assumptions.
- A Technical Reference Manual (TRM) was developed to document methods used to calculate savings from the ELIRP and RHER.
- Nominal budget projections were adjusted to more accurately reflect the conversion from real calendar year values used to analyze the economic and financial impact of the DSM portfolio.
- The program has been rebranded as EnergySense for marketing purposes to drive customer awareness and engagement. The individual sub-programs have also been rebranded with new customer-friendly names for the same purposes.

#### ELIRP

- A competitive bidding process was undertaken to select conservation service providers (CSPs) and budgets were updated to reflect the agreements reached with the selected CSPs.
- An expanded inspection process was developed to provide close oversight and offer mentorship to CSPs during the crucial early years of the program. Inspection budgets were updated to reflect the agreement entered into with a third-party inspector.

#### RHER

- Detailed research into local incremental measure costs and saving assumptions were used along with the updated avoided costs to reexamine the cost-effectiveness of the measures proposed in the First Year Implementation Plan. The results of this analysis have led PGW to offer a more streamlined schedule of rebates targeting only the highest level of energy efficient residential equipment
- Participation projections were adjusted to account for the unique characteristics of the Philadelphia heating equipment marketplace.
- Additional program service delivery details were developed including rebate processing, QC inspection, and evaluation procedures.
- Budgets were updated to reflect the latest projections from the contractor selected by PGW to process the rebate applications.

- Further market research has lead PGW to increase the minimum efficiency levels for furnaces and boilers from 92% to 94%. The higher efficiency equipment is just as available in the Philadelphia market; the price differentials between the units is nearly negligible, and are overcome when the new 2011 Federal tax Credits for energy-efficient equipment are factored in.
- In order to more effectively manage the program's subscription rates and provide continuous service, PGW proposes to treat the RHER program's first two funding years as one combined seventeen (17) month launch year. Currently, program funding levels are capped individually in FY11 (5 months of activity<sup>7</sup>) and FY12 (12 months of activity) so as to maintain the overall portfolio spending within each year's annual cap. PGW is concerned that a five month long launch period with restricted funding is too short of a time frame to allow the Company to respond effectively to developing trends of either under- or over-subscription<sup>8</sup>.

As the Company begins to build the foundation for a long-term rebate program, we do not wish to alienate customers and trade allies by having to either restrict rebate availability prematurely or quickly ramp-up market participation after an earlier restriction. Such market confusion on either the supply or demand side would be especially damaging during the initial launch phase of a new program.

PGW is therefore proposing to combine total set funding for these individual periods into one combined 17 month period to be used as needed. As a result, PGW would be permitted to provide rebates beyond the limits of the FY11 budget or conversely, to "rollover" funds not expended in FY11 to be used for rebates in FY12. PGW would, nonetheless, not spend more in FY11-12 than the total FY11-12 budgets. This proposal would allow PGW to adequately fund initial outreach efforts and respond more effectively to market behavior by deploying resources when they are needed, instead of being artificially restrained by budget year caps that would appear arbitrary to our customers.

Examples of how the combined funding period could be used include: pulling forward additional marketing money into FY11 to increase penetrations; funding more rebates in FY11 based on market demand without having to entirely stop the program until the start of the new FY; or more slowly and naturally developing the program and allowing unused FY11 rebates to be carried over into the FY12 funding period.

## CIRI

---

<sup>7</sup> The RHER launch was moved forward so as to comply with the Settlement stipulation on program launch timelines

<sup>8</sup> Oversubscription is a particular concern given recent results from natural gas rebate programs in both Pennsylvania and New York.

- PGW reworked its approach to providing services under the CIRI. The new approach focuses efforts on fewer projects, enabling PGW to have a greater impact on each. The updated CIRI also emphasizes the role of coordinating financing and other available incentives to help customers undertake the most comprehensive project possible.

Going forward, PGW will continue to use an annual implementation plan, similar in format to the First and Second Year Implementation Plans, to establish the specific actions the Company will take in the next year of program activity. PGW will use the guidelines and projections from the Five Year Plan as the main framework for development of these future plans. Further modifications and details will be derived from the evaluation of results achieved in previous program years, additional research, and input from stakeholders.

### ***C. Summary of Costs, Benefits, and Impacts***

The following tables present the projected FY 2012 impacts for the DSM Portfolio. The exception is the “Cost-Effectiveness of Planned Results”, which reflects projected results for the entire five year period of the portfolio. Unless otherwise stated, all dollar amounts in the plan are shown in nominal dollars. Please see Appendix E for additional five-year projections broken down by year as well as a comparison to projections from the Fiscal Year 2011 plan.

Over the five years of the DSM Portfolio, PGW expects to spend approximately \$60 million on six DSM programs. The programs are projected to save 1,452 BBtus of natural gas during the first five years of the portfolio, and 25,029 BBtus of natural gas over the lifetime of the measures installed. For the natural gas system, the present value of benefits is \$101.7 million leading to a present value of net benefits of \$53.7 million and a benefit-cost ratio (BCR) of 2.12. From a total resource perspective, the present value of benefits is \$110.1 million leading to a present value of net benefits of \$39.0 million and a benefit-cost ration (BCR) of 1.55. The cost-effectiveness results of both tests show that the DSM Portfolio is very cost-effective, creating nearly \$2 in benefits for every \$1 dollar spent. Data on funds spent and recovered to date can be found in tables 12 and 13 below.

Additional benefits from the five years of the portfolio include:

- Saving 7,697MWh of electricity<sup>9</sup>
- Avoiding 6,545kW of summer peak demand
- Creating over 1001 new jobs in Pennsylvania

---

<sup>9</sup> Electric savings are due to air-conditioning savings from insulation.

- Reducing the emissions of CO<sub>2</sub> by 1.55 million tons

In FY 2012, PGW plans to spend \$7.9 million, which includes the continued delivery of the ELIRP and RHER programs as well as \$163,000 on launching the Commercial and Industrial Retrofit Incentives Program (CIRI). This program is expected to save 5.4 BBtus of natural gas in the first year and provide services to multi-family buildings.

Due to the initial burden of setting up the infrastructure for the DSM portfolio, PGW's administration costs come to \$814,924, or 10.4% of the second year's budget.

All data presented in this plan on progress to date is through the end of February, 2011. Future Implementation Plans will also report on activity through the end of February of the current year to allow necessary time for processing the data and preparing the plan.



i) **Cost-Effectiveness of Planned Results**

**Table 1. Total Resource Cost-Effectiveness Results FY 2011 – FY 2015 (2009\$)**

Program	Total Resource			
	PV Benefits	PV Costs	PV Net Benefits	Benefit-Cost Ratio
Enhanced Low Income Retrofit	\$ 30,206,265	\$ 23,619,789	\$ 6,586,476	1.28
Residential Heating Equipment Rebates	\$ 39,877,193	\$ 17,104,467	\$ 22,772,727	2.33
Comprehensive Residential Retrofit Incentives	\$ 31,067,120	\$ 20,775,577	\$ 10,291,543	1.50
High-Efficiency Construction - Residential	\$ 2,821,059	\$ 1,789,057	\$ 1,032,002	1.58
<b>Residential Total</b>	<b>\$ 103,971,638</b>	<b>\$ 63,288,891</b>	<b>\$ 40,682,747</b>	<b>1.64</b>
Commercial and Industrial Retrofit Incentives	\$ 4,056,518	\$ 2,898,514	\$ 1,158,004	1.40
Commercial and Industrial Equipment Rebates	\$ 1,320,542	\$ 1,173,872	\$ 146,670	1.12
High-Efficiency Construction - Non-Residential	\$ 703,518	\$ 446,157	\$ 257,361	1.58
<b>Commercial &amp; Industrial Total</b>	<b>\$ 6,080,578</b>	<b>\$ 4,518,543</b>	<b>\$ 1,562,036</b>	<b>1.35</b>
Portfolio-wide Costs	n/a	\$ 3,245,695	\$ (3,245,695)	n/a
<b>Total Portfolio</b>	<b>\$ 110,052,216</b>	<b>\$ 71,053,128</b>	<b>\$ 38,999,088</b>	<b>1.55</b>

**Table 2. Gas Energy System Cost-Effectiveness Results FY 2011 – FY 2015 (2009\$)**

Program	Gas Energy System			
	PV Benefits	PV Costs	PV Net Benefits	Benefit-Cost Ratio
Enhanced Low Income Retrofit	\$ 28,490,593	\$ 23,619,789	\$ 4,870,804	1.21
Residential Heating Equipment Rebates	\$ 38,263,835	\$ 7,688,160	\$ 30,575,676	4.98
Comprehensive Residential Retrofit Incentives	\$ 26,090,208	\$ 9,193,747	\$ 16,896,461	2.84
High-Efficiency Construction - Residential	\$ 2,821,059	\$ 1,516,314	\$ 1,304,745	1.86
<b>Residential Total</b>	<b>\$ 95,665,695</b>	<b>\$ 42,018,011</b>	<b>\$ 53,647,685</b>	<b>2.28</b>
Commercial and Industrial Retrofit Incentives	\$ 4,056,518	\$ 1,401,668	\$ 2,654,851	2.89
Commercial and Industrial Equipment Rebates	\$ 1,320,542	\$ 1,029,669	\$ 290,873	1.28
High-Efficiency Construction - Non-Residential	\$ 703,518	\$ 378,140	\$ 325,378	1.86
<b>Commercial &amp; Industrial Total</b>	<b>\$ 6,080,578</b>	<b>\$ 2,809,477</b>	<b>\$ 3,271,102</b>	<b>2.16</b>
Portfolio-wide Costs	n/a	\$ 3,245,695	\$ (3,245,695)	n/a
<b>Total Portfolio</b>	<b>\$ 101,746,274</b>	<b>\$ 48,073,182</b>	<b>\$ 53,673,092</b>	<b>2.12</b>

ii) Gas Savings

Table 3. Projected Natural Gas Savings for FY 2012

PROGRAM	FY 2012	
	INCREMENTAL NET ANNUAL GAS SAVINGS (BBtu)	INCREMENTAL NET LIFETIME GAS SAVINGS (BBtu)
Enhanced Low Income Retrofit	86.2	1,293.3
Residential Heating Equipment Rebates	31.6	699.4
Comprehensive Residential Retrofit Incentives	0.0	0.0
High Efficiency Construction Incentives - Residential	0.0	0.0
<b>Residential Total</b>	<b>117.9</b>	<b>1,992.7</b>
Commercial and Industrial Retrofit Incentives	5.4	80.7
Commerical and Industrial Equipment Rebates	0.0	0.0
High Efficiency Construction Incentives - Nonresidential	0.0	0.0
<b>Commercial &amp; Industrial Total</b>	<b>5.4</b>	<b>80.7</b>
<b>Total Portfolio</b>	<b>123.2</b>	<b>2,073.5</b>

### iii) Budgets

**Table 4. FY 2012 Budget Cap Basis**

<b>PGW DSM Spending - Settlement Agreement FY 2012</b>	
<b>Settlement Agreement:</b>	
24 (b) – The yearly DSM spending budget for the plan for the first two years (FY 2011 and FY 2012) shall not exceed 1% of PGW’s total projected gross intrastate operating revenues. PGW agrees that for the first two years (FY 2011 and FY 2012), it will fully fund the Enhanced Low Income Retrofit Program at the budget levels originally proposed for this Program by the Company in this proceeding.	
FY 2012 Projected Gross Intrastate Operating Revenues <b>FN 1</b>	\$ 829,378,000
	1.00%
FY 2011 Total DSM Spending Budget	\$ 8,293,780
<b>FN 1:</b> FY 2012 Total Operating Revenues from the Revised Five Year forecast submitted to the Philadelphia Gas Commission on December 7, 2010.	

**Table 5. EnergySense Portfolio Budget Caps (Nominal)**

Fiscal Year	Budget Cap		FY 2012 Plan	\$ Difference	% Difference
	1% Op Rev	5 Year Plan			
2011	\$ 7,980,380		\$ 7,186,974	\$ (793,406)	-9.9%
2012	\$ 8,293,780		\$ 7,873,179	\$ (420,601)	-5.1%
2013		\$ 16,102,545	\$ 11,868,201	\$ (4,234,344)	-26.3%
2014		\$ 17,282,496	\$ 18,162,193	\$ 879,697	5.1%
2015		\$ -	\$ 20,330,230	\$ 20,330,230	
<b>Totals</b>		\$ 60,148,151	\$ 65,420,777		8.8%

The initial filing had been proposed in calendar year terms, to cover 5 calendar years of activity. For implementation purposes, the portfolio was switched to fiscal year terms so as to align with PGW’s budgeting cycles. This transition resulted in the need to complete the 5<sup>th</sup> funding year, as the initial calendar year portfolio ended on December 31, 2014. The remainder of the 5<sup>th</sup> funding year (January 1 through August 21, 2015) was extrapolated based on funding levels to that date. This 5<sup>th</sup> funding year transition is the reason for the increase from the previous \$60mm total nominal planned expenditure to the current \$65mm total figure.

**Table 6. ELIRP Budget Comparisons & Compliance (2009 \$)**

Fiscal Year	5 Year Plan	FY 2012 Plan (w/ Admin)	CWP	ELIRP & CWP	\$ Difference	% Difference
	I	II	III	IV = II + III	V = IV - I	VI = V / I
2011	\$ 6,783,440	\$ 6,398,810	\$ 704,856	\$ 7,103,666	\$ 320,226	4.7%
2012	\$ 6,708,440	\$ 6,347,049	\$ -	\$ 6,347,049	\$ (361,391)	-5.4%
Totals	\$ 13,491,880	\$ 12,745,859	\$ 704,856	\$ 13,450,715	\$ (41,165)	-0.3%

Inflation Assumption: 2%

The settlement called for ELIRP funding levels to be maintained at originally proposed levels. While we were able to comply with this stipulation in the first funding year, other funding restraints prevented the funding of ELIRP at initially proposed levels in the second funding year. First year funding for ELIRP was increased such that the first two years combined match initially proposed levels, while still complying with all other settlement stipulations

**Table 7. Projected FY 2012 Portfolio Budgets**

<b>PROGRAM</b>	<b>FY 2012</b>
Enhanced Low Income Retrofit	\$ 6,076,554
Residential Heating Equipment Rebates	\$ 825,321
Comprehensive Residential Retrofit Incentives	\$ -
High Efficiency Construction Incentives - Residential	\$ -
<b>Residential Total</b>	<b>\$ 6,901,875</b>
Commercial and Industrial Retrofit Incentives	\$ 163,304
Commercial and Industrial Equipment Rebates	\$ -
High Efficiency Construction Incentives - Nonresidential	\$ -
<b>Commercial &amp; Industrial Total</b>	<b>\$ 163,304</b>
Portfolio Administration and Management	\$ 464,000
Portfolio Marketing and Business Development	\$ 344,000
<b>Portfolio-Wide Costs Total</b>	<b>\$ 808,000</b>
<b>Utility Costs</b>	<b>\$ 7,873,179</b>
Participant Costs	\$ 1,022,819
<b>Total</b>	<b>\$ 8,895,998</b>

**Table 8. Projected FY 2012 Portfolio Budget Details**

<b>Category</b>	<b>FY 2012</b>
Customer Incentives & Measure Installation Costs	\$ 5,865,504
Administration and Management	\$ 501,862
Marketing and Business Development	\$ 494,000
Contractor Costs	\$ 940,395
Inspection and Verification	\$ 71,418
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ 7,873,179</b>
Participant Costs	\$ 1,022,819
<b>Total</b>	<b>\$ 8,895,998</b>

**Table 9. Projected FY 2012-2015 Budgets with Portfolio-Wide Costs Allocated to Programs<sup>10</sup>**

<b>PROGRAM</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2011 - FY 2015</b>
<b>Enhanced Low Income Retrofit</b>	\$ 6,652,843.25	\$ 6,690,938	\$ 6,158,440	\$ 6,876,458	\$ 7,069,271	\$ 33,447,950
<b>Residential Heating Equipment Rebates</b>	\$ 420,965	\$ 934,798	\$ 1,917,950	\$ 3,749,317	\$ 4,570,167	\$ 11,593,198
<b>Comprehensive Residential Retrofit Incentives</b>	\$ 42,697	\$ 47,906	\$ 2,568,613	\$ 5,219,359	\$ 6,008,883	\$ 13,887,459
<b>Commercial and Industrial Retrofit Incentives</b>	\$ 56,793	\$ 184,192	\$ 537,140	\$ 698,407	\$ 560,592	\$ 2,037,124
<b>Commercial and Industrial Equipment Rebates</b>	\$ 4,791	\$ 5,376	\$ 238,650	\$ 556,643	\$ 755,898	\$ 1,561,358
<b>High Efficiency Construction Incentives</b>	\$ 8,884	\$ 9,968	\$ 447,408	\$ 1,062,009	\$ 1,365,420	\$ 2,893,689
<b>TOTAL PORTFOLIO</b>	<b>\$ 7,186,974</b>	<b>\$ 7,873,179</b>	<b>\$ 11,868,201</b>	<b>\$ 18,162,193</b>	<b>\$ 20,330,230</b>	<b>\$ 65,420,777</b>

<sup>10</sup> See appendix E for budgets in Real 2009 \$ for comparison

iv) Electricity Savings

Table 10. Projected FY 2012 Electricity Savings

PROGRAM	FY 2012		
	INCREMENTAL NET ANNUAL ELECTRICITY SAVINGS (MWh)	INCREMENTAL NET LIFETIME ELECTRICITY SAVINGS (MWh)	INCREMENTAL NET ANNUAL SUMMER PEAK DEMAND SAVINGS (kW)
Enhanced Low Income Retrofit	278.7	4180.1	325.1
Residential Heating Equipment Rebates	146.3	2926.0	0.0
Comprehensive Residential Retrofit Incentives	0.0	0.0	0.0
High Efficiency Construction Incentives - Residential	0.0	0.0	0.0
<b>Residential Total</b>	<b>425.0</b>	<b>7106.1</b>	<b>325.1</b>
Commercial and Industrial Retrofit Incentives	0.0	0.0	0.0
Commercial and Industrial Equipment Rebates	0.0	0.0	0.0
High Efficiency Construction Incentives - Nonresidential	0.0	0.0	0.0
<b>Commercial &amp; Industrial Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Total Portfolio</b>	<b>425.0</b>	<b>7106.1</b>	<b>325.1</b>



## ***D. Portfolio Structure***

Please see Appendix D for an organizational chart of the DSM Portfolio.

### PGW Program Administration

Within the Company, DSM Administration staff oversees the management of each program and the portfolio as a whole. Program Administration staff monitors program activity, assist in training and education, analyze results, and organize coordination between PGW, Conservation Service Providers (CSPs), and with external market actors.

During FY2011, the Company hired a program manager to oversee all aspects of the Portfolio. The manager is responsible for meeting the majority of PGW's responsibilities as described under the various programs in this and the FY2011 Implementation Plans. The manager coordinates all of PGW's activities with regard to the DSM portfolio. This chiefly involves overseeing the design, development, implementation and reporting of the portfolio's programs. The manager works closely with the Company's management team, the Program Development Consultants and the Company's marketing/communications, financing/accounting and legal/regulatory staff to ensure all of the companies responsibilities are met.

The Company also hired two analysts to focus on providing administrative support for the manager. One analyst primarily provides support for the residential programs, while the other analyst supports the commercial/industrial programs.

### PGW Marketing/Communications

The Company's internal Marketing/Communications staff will continue assisting with designing and conducting marketing for the full DSM portfolio and potentially for individual programs within the portfolio.

The Company has retained Rector Communications to assist with the development of cohesive portfolio-wide communications materials for the portfolio, including a program name, tagline, logos and images for use in customer awareness and engagement.

In addition to the overall portfolio communications, PGW may also engage marketing services for each individual program within the portfolio. Specific marketing efforts are distinct and customized depending on the needs of the individual DSM programs. Some of this functionality may be contracted out to a third party (as was the case for Marketing within the RHER).

Marketing plans are described in greater detail within the context of the individual program implementation descriptions.

### PGW Finance/Accounting

The Company's Finance and Accounting department staff is responsible for the payment of invoices received from implementation contractors. They are also responsible for maintaining records of internal expenses related to DSM Portfolio activity.

### PGW Legal/Regulatory Affairs

Legal and Regulatory Affairs is responsible for communicating regulatory requirements to the Program Administrators and/or any other relevant parties as well as for the regular dissemination of reports to the Commission. Legal staff are also involved in the drafting and execution of contracts with third parties.

### Outside Legal Counsel

PGW will employ outside legal counsel to assist in communicating regulatory requirements to the Program Administrators and/or any other relevant parties as well as for the regular dissemination of reports to the Commission.

### PGW Information Services

Information Services develops and maintains the DSM Tracking System. This has included designing, building, and testing the initial system. They also add additional functionality as new programs are rolled out. In the future, part or all of this activity may be contracted out to a third party at the discretion of the Company. Additionally, Information Services will assist in the production of the data for the annual reports to be submitted to the PUC.

### Program Development Consultants

In the First Year Implementation Plan, PGW retained the services of a team of consultants to aid in the design, implementation, and analysis of the individual programs and the entire DSM Portfolio. Additionally, the Program Development Consultants were reserved to aid in the preparation of regulatory filings. At the time of the filing of the First Year Implementation Plan, the Company had retained the services of Green Energy Economics Group, Inc. (GEEG), a consulting firm with extensive experience energy efficiency portfolio development, design, and analysis. GEEG was originally contracted to develop the Five Year DSM Plan and continued to work closely with PGW to aid in the ongoing development of the DSM Portfolio through the FY 2011 implementation stages.

GEEG's contract with the Company will end in July, 2011, however, PGW reserves the right to retain Program Development Consultant services in the future. Going forward, the Program Development Consultant will continue to be responsible for aiding in the

continual development of the DSM Portfolio through the implementation stages. The Program Development Consultant will also aid in the preparation of regulatory filings.

### Communications Hub/Hotline

For the first program year, PGW decided to utilize the Company's call-center to field general calls related to the DSM portfolio. The protocols for managing inquiries and coordinating communication are customized for each program. Calls pertaining to individual programs are directed to the entity responsible for administering that program. For the ELIRP & RHER programs, that entity will be the contractor(s) selected by PGW. PGW reserves the right to either assume program-level call center operations internally or contract those services out to 3rd parties in future years.

Personnel at program-level call centers are specifically trained in the technical content and program structure in order to provide the necessary information and/or relay requests to relevant parties.

Information tracked by the communications hub will be used to aid in the improvement of energy efficiency service delivery to customers.

### Conservation Service Providers

Pursuant to an RFP process, PGW will seek implementation conservation service providers (CSP) that will be responsible for distinct functions, or in some cases all aspects, of program delivery. Programs may be served by one or more contractors, or may share contractors with other programs in the portfolio. DSM Program Administration staff will be responsible for overseeing the activity of the CSPs. The role of CSPs to date is described more fully within each program section of this plan.

### Inspectors

PGW may elect to seek independent 3rd party inspectors for any or all of the programs pursuant to an RFP process. The inspectors are responsible for inspecting the work of the CSPs and reporting the results of their findings to PGW. The structure and protocols for inspections are customized for each program. For additional details, see the section "Quality Control" within this Plan.

### Evaluator

PGW will hire an independent evaluator to complete an in-depth evaluation of each program every two years following the creation of that program. The evaluator will be responsible for gathering reporting requirements from regulators and preparing the evaluation report. PGW and its contractors will provide the evaluator with all required information. PGW will work with stakeholders to develop the research agenda for each upcoming evaluation in advance of issuing requests for proposals from contractors.



## ***F. Coordination Activities***

PGW seeks to coordinate DSM Portfolio efforts as much as possible with other organizations and programs in order to leverage existing resources and avoid lost opportunities and duplication of services. PGW is currently pursuing the following coordination activities:

- PGW is continuing to work to coordinate the installation of CFLs with PECO through the Enhanced Low Income Retrofit Program. Under the current proposal, PGW's implementation CSPs would install the bulbs and PECO would contribute toward the costs. More details on these efforts are included in the plan for the ELIRP
- The two agencies administering the State Weatherization Assistance Program in Philadelphia, ECA and PHDC, have received increased funding through ARRA to supplement their annual weatherization activities for low-income households. The eligibility for participating in WAP is very similar to PGW's CRP, and by extension CWP, eligibility criteria. In order to assist the WAP agencies in achieving the greatest impact, PGW will continue working with the WAP agencies to avoid the duplication of efforts, provide deeper savings, and to reach the most customers possible.
- In order to increase customer participation in its retrofit programs, the Company will aid customers in seeking and securing financing. PGW will target the Keystone HELP program as well as local banks and credit unions.
- PGW is currently pursuing all possible opportunities to partner with the City of Philadelphia to identify potential opportunities to align PGW energy efficiency funds with Energy Efficiency and Conservation Block Grants that have been granted to the City through the American Recovery and Reinvestment Act (ARRA). These grants are being administered by the City's Energyworks program which has both residential and commercial/industrial components.
- PGW has partnered with PWIB/PWDC PA CareerLink Philadelphia to connect local unemployed workers with weatherization training programs and then onto employment with our ELIRP CSPs.
- PGW has partnered with the Philadelphia Health Department Green & Healthy Homes and Lead Poison Prevention Programs. In this initiative, PGW's ELIRP contractors refer customers to the Health Department for particular housing health and safety problems. The Health Department is then able to correct these problems for residents, which allows PGW to provide cost-effective weatherization treatments to the customer under ELIRP.
- PGW will coordinate current marketing efforts with efforts by program CSPs. Examples of such cooperation include referencing recent program activity in

“Good Gas News,” PGW’s monthly newsletter, providing information through bill inserts, and organizing joint training and education events.

- PGW directs CSPs to provide information on other relevant energy efficiency programs at the time of service delivery. This includes information about additional PGW programs as well as other local, state, and federal programs.

## ***G. Evaluation, Monitoring, and Verification***

### **i) Planning and Reporting**

To satisfy the Settlement and provide a regular annual reporting cycle, PGW will continue to follow the reporting and planning schedule outlined in the First Year Implementation Plan.

#### Annual Implementation Plan

PGW will continue to provide an Annual Implementation Plan as outlined in the First Year Implementation Plan. However, the first program in PGW’s DSM portfolio, ELIRP, launched in January, 2011. Due to the limited program activity that has occurred prior to the preparation of the Plan, PGW has provided as much useful data as possible, while still meeting the April 30<sup>th</sup> filing date. Future Implementation Plans will provide more robust information on results achieved to date.

#### Annual Reporting

PGW plans to file Annual Reports in accordance with the process described in the First Year Implementation Plan. The first Annual Report is scheduled to be filed in January of 2011 and will cover activity from FY 2011,

#### LIURP Reporting

There are no updates to PGW’s LIURP reporting plans.

#### Additional Reporting

The Company may submit periodic memoranda detailing any type of unusual conditions or events that may lead to major program changes, cancellation, or replacement.

### **ii) Quality Control**

PGW will continue to maintain and establish a DSM Portfolio team to provide overall program management, emphasize funding level requirements, and coordinate program delivery with other utilities and energy efficiency programs.

The Company will continuously monitor the program results, and, when necessary, program managers will modify the delivery of program services to meet changing customer and market conditions. Included in this oversight is the monitoring of vendor performance, customer satisfaction, and market responsiveness.

The Enhanced Low-Income Retrofit Program (ELIRP) Quality Control inspector will be responsible for assessing the quality of the ELIRP CSPs' weatherization measure installations. PGW aims to inspect ten percent (10%) of the homes targeted annually to be served under ELIRP. The QC inspector will select and schedule field inspections. On these field inspections the QC will identify missed opportunities for cost-effective measure installation, identify non-cost-effective measure installations, identify both minor and major health/safety issues, provide on-site mentoring of installation crews and auditors, document the findings of the field inspection and provide written recommendations for program improvements including formal training topics.

A limited number of applications will be selected for quality control (QC) verifications in the RHER Program. The program administrator will provide the verifier with a list of awarded applications. The verification includes two parts: validation of application information and checking on the quality of service by collecting feedback from the customer.

### **iii) Data Management**

PGW has constructed a DSM Tracking System ("the Database") as a central repository for data relating to the DSM Portfolio. The Database is a key part of the Company's approach to oversight and quality control. In FY2011, PGW designed, developed and implemented the first and second phases of its DSM Tracking System.

For the first phase, PGW built the infrastructure that houses all data related to ELIRP, provided an interface for ELIRP contractors to enter data, and to put in place the structure and protocols enabling analysis and reporting. The database has a graphical user interface (GUI) that ELIRP contractors use to enter data about each house that they treat, including premise information, resident demographics, treatments performed, and costs incurred. PGW uses this information to generate reports tracking progress towards program goals, performance, and costs. PGW is also expanding the database to track information submitted by the ELIRP QC inspector through a similar GUI.

The second phase of database development involved the collection and analysis of RHER data. Unlike ELIRP, where PGW receives information from multiple contractors, the RHER only has a single contractor that processes rebates. The rebate processor, Helgeson Enterprises, has a fully developed data tracking system closely linked to its rebate processing. The Company has set-up automatic electronic access to Helgeson's system through a web-portal and imports custom datasets in real-time. The Company then uses

this to generate reports and analysis that allow program administrators to track progress, performance and costs.

PG initially launched the database in January, 2011 and continues to refine the system to maximize utility. As the Company develops implements the rest of the DSM portfolio, the database will be expanded to aid in data management and analysis for those programs.

#### **iv) Evaluations**

In the past, PGW has performed impact evaluations on its Conservation Works Program (CWP). The CWP evaluations cycle used the following framework:

- An evaluation covers a single calendar year
- Evaluations were performed on even numbered years (i.e. 2004, 2006, 2008, etc.)
- The evaluator had six (6) months to perform the evaluation, once twelve (12) months of post-usage data have been collected

Going forward, PGW plans to perform a formal impact evaluation on each of its DSM programs. The impact evaluation assesses and quantifies a program's direct and indirect outcomes. It estimates observable changes attributable to the program by comparing program participants to control groups. These evaluations tend to focus on energy savings and their cost-effectiveness

The Company will continue conducting ELIRP impact evaluations biennially in calendar years, so as to remain consistent with existing PUC required LIURP reporting practices. The first ELIRP impact evaluation will be conducted strictly on the 2011 calendar year's activities. Subsequent evaluations will cover the two CYs after the prior evaluation.

The Company will use the following framework to establish a cycle of formal impact evaluations for the other five programs in the DSM portfolio:

- The first evaluation for each program will cover the fiscal year (FY) in which the program launched, even if the program existed for only a portion of that year
- Each subsequent evaluation will cover the two FYs after the prior evaluation
- A third-party evaluator will have three (3) months to perform the evaluation, once twelve (12) months of post-usage data have been collected
- A portfolio-wide impact evaluation will be performed in the fifth year (FY 2015) of the DSM portfolio



PGW found that a large portion of the time spent preparing the evaluation of the CWP came from the evaluator gathering and checking data on program activity from various contractor sources. PGW feels that it is possible to significantly reduce the evaluation report preparation time because the DSM database will provide centralized and timely record keeping.

Covering a shorter time frame in the first impact evaluation and spending less time preparing the report allows at least one impact evaluation to be performed on each program within the first five-years of the DSM portfolio. Additionally, it provides PGW with more immediate feedback that it can use to improve program performance. Appendix G shows how the schedule of evaluations.

## H. Key Assumptions

### i) Avoided Costs

In July of 2010 and March of 2011, as part of the detailed program design process, PGW updated its assumptions for avoided natural gas costs<sup>11</sup>. The updated avoided costs were significantly lower than the previous projections from September of 2009. Table 11 shows the average annual drop in projected avoided cost over various time frames.

**Table 11: Average Annual Percentage Change in Avoided Costs from September 2009 to March 2011**

Calendar Years	Baseload	Space Heating	Water Heating
2010-2019	-19.3%	-17.7%	-18.8%
2020-2030	-12.2%	-11.3%	-11.9%
<b>2010-2030</b>	<b>-15.6%</b>	<b>-14.4%</b>	<b>-15.2%</b>

This significant reduction in avoided costs had a broad impact on the cost-effectiveness of the portfolio, reducing the value of benefits across the board. While no single program was rendered non-cost-effective, the new avoided costs played a significant role in PGW's decision regarding the final mix of measure rebates offered through the RHER in FY 2011<sup>12</sup>.

PGW plans to update avoided costs for the FY 2013 Implementation Plan.

### ii) Benefit-Cost Analysis

The cost-effectiveness results reported in this plan followed standard industry practices for utilizing the Total Resource Cost (TRC) test for cost-effectiveness. The Company employed an Excel spreadsheet-based tool to calculate the cost-effectiveness of the DSM Portfolio. A functioning version of the tool with all PGW's cost, savings, and participation assumptions as an electronic appendix to this plan.

The analysis used a real discount rate (RDR) of 5.9%. The RDR was calculated using an assumption of a nominal discount rate (NDR) of 8.02% and inflation rate of 2.0%. This is the same discount rate used in present worth calculations in PGW's most recent evaluation of its low-income retrofit program.

---

<sup>11</sup> See Appendix A for table of updated avoided costs

<sup>12</sup> See Section II.B for additional details on RHER measure screening results

### **iii) Technical Reference Manual**

PGW has prepared the FY 2011 version of its Technical Reference Manual (TRM), which is included as Appendix H. The FY 2011 TRM includes details on calculating deemed savings for the ELIRP and RHER. PGW is currently developing the CIRI section of the TRM. This section will provide guidance for developing custom characterization of complex custom efficiency measures based on site-specific conditions.

The primary source of information for the ELIRP and RHER sections of the TRM is other utilities' gas DSM programs, with regional adjustments where appropriate. In the future, the characterizations may also be based on PGW program experience and evaluations. Sources for all measure characteristics are documented in the TRM.

Subsequent programs' TRM calculations will be developed closer to the launch of their respective programs. The TRM is a living document and is updated as technical information changes or new information becomes available.

## I. Cost Recovery Mechanism and Actual Expenditures

The Enhanced Low Income Retrofit Program costs shall be recovered through the Universal Services Surcharge which began on September 1, 2010.

The Efficiency Cost Recovery Surcharge took effect upon approval of the initial implementation plans through the end of PGW fiscal year (FY) 2011. The Efficiency Cost Recovery Surcharge will continue through the end of FY 2012.

**Table 12: ELIRP USC Cost Recovery  
September 2010 Through February 2011**

<u>Month</u>		<u>Applicable Volumes</u>	<u>ELIRP Charge</u>	<u>USC Revenue Billed</u>	<u>USC Expenses</u>	<u>Monthly Over/(Under) Recovery</u>	<u>Cumulative Over/(Under) Recovery</u>
September 2010	Actual	1,109,653	\$ 0.0924	\$ 102,492	\$ 4,565	\$ 97,927	\$ 97,927
October	Actual	1,573,678	\$ 0.1410	\$ 221,832	\$ 13,656	\$ 208,176	\$ 306,104
November	Actual	3,244,696	\$ 0.1410	\$ 457,386	\$ 235,151	\$ 222,235	\$ 528,339
December	Actual	6,848,148	\$ 0.1409	\$ 965,046	\$ 258,109	\$ 706,937	\$ 1,235,276
January 2011	Actual	10,697,049	\$ 0.1409	\$ 1,506,968	\$ 105,916	\$ 1,401,052	\$ 2,636,328
February	Actual	9,291,679	\$ 0.1409	\$ 1,308,984	\$ 239,743	\$ 1,069,241	\$ 3,705,568
<u>Expenses</u>		<u>Sep-10</u>	<u>Oct-10</u>	<u>Nov-10</u>	<u>Dec-10</u>	<u>Jan-11</u>	<u>Feb-11</u>
Conservation Works	\$	4,565	\$ 13,656	\$ 179,959	\$ 198,424	\$ 5,494	\$ 221,064
ELIRP	\$	-	\$ -	\$ 55,192	\$ 59,685	\$ 100,422	\$ 18,679
Total	\$	4,565	\$ 13,656	\$ 235,151	\$ 258,109	\$ 105,916	\$ 239,743

**Table 13: Efficiency Cost Recovery Surcharge  
September 2010 Through February 2011**

**RESIDENTIAL & PHA GS**

		<u>Volumes</u>	<u>ECR Surcharge</u>	<u>Revenue Billed</u>	<u>RHER Expenses</u>	<u>CIRI Expenses</u>	<u>CIER Expenses</u>	<u>HECI Expenses</u>	<u>CRRRI Expenses</u>	<u>Total</u>	<u>Monthly Over/(Under)</u>	<u>Cumulative Over/(Under)</u>
September 2010	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
October	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
November	Actual	-	\$ -	\$ -	\$ 4,888	\$ -	\$ -	\$ 384	\$ 3,549	\$ 8,821	\$ (8,821)	\$ (8,821)
December *	Actual	2,560,740	\$ 0.0168	\$ 43,020	\$ 5,286	\$ -	\$ -	\$ 415	\$ 3,838	\$ 9,539	\$ 33,481	\$ 24,660
January 2011	Actual	8,464,623	\$ 0.0168	\$ 142,206	\$ 8,779	\$ -	\$ -	\$ 689	\$ 6,374	\$ 15,842	\$ 126,364	\$ 151,024
February	Actual	7,264,385	\$ 0.0168	\$ 122,042	\$ 1,654	\$ -	\$ -	\$ 130	\$ 1,201	\$ 2,985	\$ 119,057	\$ 270,081

**COMMERCIAL & PHA**

		<u>Volumes</u>	<u>ECR Surcharge</u>	<u>Revenue Billed</u>	<u>RHER Expenses</u>	<u>CIRI Expenses</u>	<u>CIER Expenses</u>	<u>HECI Expenses</u>	<u>CRRRI Expenses</u>	<u>Total</u>	<u>Monthly Over/(Under)</u>	<u>Cumulative Over/(Under)</u>
September 2010	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
October	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
November	Actual	-	\$ -	\$ -	\$ 49	\$ 448	\$ 207	\$ 384	\$ -	\$ 1,088	\$ (1,088)	\$ (1,088)
December *	Actual	741,937	\$ 0.0053	\$ 3,932	\$ 53	\$ 484	\$ 224	\$ 415	\$ -	\$ 1,176	\$ 2,756	\$ 1,668
January 2011	Actual	1,922,977	\$ 0.0053	\$ 10,192	\$ 89	\$ 804	\$ 372	\$ 689	\$ -	\$ 1,954	\$ 8,238	\$ 9,906
February	Actual	1,762,507	\$ 0.0053	\$ 9,341	\$ 17	\$ 152	\$ 70	\$ 130	\$ -	\$ 369	\$ 8,972	\$ 18,878

**INDUSTRIAL**

		<u>Volumes</u>	<u>ECR Surcharge</u>	<u>Revenue Billed</u>	<u>RHER Expenses</u>	<u>CIRI Expenses</u>	<u>CIER Expenses</u>	<u>HECI Expenses</u>	<u>CRRRI Expenses</u>	<u>Total</u>	<u>Monthly Over/(Under)</u>	<u>Cumulative Over/(Under)</u>
September 2010	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
October	Actual	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
November	Actual	-	\$ -	\$ -	\$ -	\$ 448	\$ 207	\$ -	\$ -	\$ 655	\$ (655)	\$ (655)
December *	Actual	68,578	\$ 0.0532	\$ 3,648	\$ -	\$ 484	\$ 224	\$ -	\$ -	\$ 708	\$ 2,940	\$ 2,285
January 2011	Actual	162,829	\$ 0.0532	\$ 8,663	\$ -	\$ 804	\$ 372	\$ -	\$ -	\$ 1,176	\$ 7,487	\$ 9,772
February	Actual	124,083	\$ 0.0532	\$ 6,601	\$ -	\$ 152	\$ 70	\$ -	\$ -	\$ 222	\$ 6,379	\$ 16,151

\* Volumes include 50% of Dec 2010 billed sales

## **Plans for Current Programs**

This section contains the detailed completed and planned activities for programs that provide delivery of energy efficiency services in the first year of the DSM Portfolio, FY 2011. This includes two programs, the Enhanced Low Income Retrofit Program (ELIRP) and the Residential Heating Equipment Rebate program (RHER) for residential customers. The ELIRP is an expansion of PGW's current CWP, both in customers served and the depth of savings achieved. The RHER is a new program that will provide prescriptive incentives for high efficiency gas heating equipment. The ELIRP program began service delivery in January 2011 and the RHER will begin service delivery on April 15, of 2011.

### ***A. Enhanced Low Income Retrofit Program***

#### **i) Program Description**

The Enhanced Low-Income Retrofit Program seeks to provide cost-effective energy savings to low-income customers who participate in PGW's Customer Responsibility Program (CRP). A secondary goal of the program is to reduce the overall long-term cost of the CRP as paid by all firm customers. The program seeks to achieve these goals and make customers' homes more energy efficient and comfortable by:

- Repairing or replacing older and less energy efficiency heating systems
- Providing comprehensive weatherization services
- Educating customers on ways to reduce their energy use along with basic health and safety information
- Raising awareness of energy conservation and encouraging the incorporation of energy saving behavior
- Targeting high-use customers to maximize impact and increase cost-effectiveness
- Streamlining the delivery mechanism through the use of implementation contractors

The program replaced the Conservation Works Program (CWP) as the Company's Low-Income Usage Reduction Program (LIURP) and was launched in January of 2011.

#### **ii) Costs, Benefits, and Impacts**

Over FY 2011 to FY 2015, the program is expected to provide net present value benefits of \$6.7 million with a benefit-cost ratio (BCR) of 1.28. The program aims to serve 2,087 customers in FY 2012, with associated annualized gas savings of 86.2 BBTus, or 41.3 MMbtu/customer. In FY 2012, the program is projected to cost \$6.1 million. The following table (14) shows a detailed breakout of participation, costs, and savings.

**Table 14. Projected FY 2012 Impacts for the ELIRP**

	<b>FY 2012</b>
<b><i>PARTICIPATION</i></b>	
Analyses/Audits	n/a
Customers with Installations	2,087
<b><i>COSTS</i></b>	
Measure Installation Costs	\$ 5,109,821
Administration and Management	\$ -
Marketing and Business Development	\$ -
Contractor Costs	\$ 901,733
Inspection and Verification	\$ 65,000
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ 6,076,554</b>
Participant Costs	\$ -
<b>Total</b>	<b>\$ 6,076,554</b>
<b><i>BENEFITS</i></b>	
Net Annual BBtu	86.2
Net Lifetime BBtu	1,293.3
Net Annual MMBtu / Customer	41.3
Weighted Lifetime (years)	15.0

As of February 28, 2011<sup>13</sup>, ELIRP has been treating customer houses for approximately one month. In January PGW hosted a weatherization training session for all three contractor firms to present best practices and provide field trainings from experienced trainers. All firms spent the remaining weeks of January scheduling visits for their assigned homes. To date, 61 houses have been audited; however no houses have received completed treatments. As such, we are not yet able to provide estimated savings for treatments performed to date. A summary of results is presented in Table 15.

---

<sup>13</sup> The Implementation Plans will always report on all current FY activity through the end of February to give PGW ample time to process data and prepare the Plan.

**Table 15. Quantitative ELIRP Impacts from Inception to February 28, 2011**

	<b>FY11 To February 28</b>
<b><i>PARTICIPATION</i></b>	
Analyses/Audits	61
Customers with Installations	-
<b><i>COSTS</i></b>	
Measure Installation Costs	\$ 35,525
Administration and Management	\$ -
Marketing and Business Development	\$ -
Contractor Costs	\$ 144,818
Inspection and Verification	\$ -
On-site Technical Assessment	\$ -
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ 180,343</b>
Participant Costs	\$ -
<b>Total</b>	<b>\$ 180,343</b>
<b><i>BENEFITS</i></b>	
Net Annual BBtu	-
Net Lifetime BBtu	-
Net Annual MMBtu / Customer	-
Weighted Lifetime (years)	15.0

The following qualitative ELIRP Developments have occurred in FY11 through February 28, 2011:

- Selected three ELIRP weatherization contractors – ECA, CMC and The Mark Group; launched program.
- Held a one-week contractor training session for all hired contractors to instill instructions and expectations for ELIRP service delivery
- Developed an expanded inspection process to provide close oversight and offer mentorship to contractors during the crucial early years of the program
- Designed a custom-made database to house all ELIRP program data activity, and to provide all output calculations and reports.
- Audited and/or treated 61 homes
- Our contractors have hired 12 entry-level works through our PA CareerLink Philadelphia partnership
- Our contractors have begun referring homes with health and safety issues to the Philadelphia Department of Public Health for potential remediation services

### **iii) Workflow**

The program provides services in the same way as the former CWP pilot program with a few modifications identified as ways to achieve deeper savings. Typical measures address low-cost maintenance issues and identify cost-effective opportunities for greater savings



through additional weatherization treatments and early-replacements of furnaces and boilers. Following the audit, measures identified as cost effective are installed. The steps below outline the workflow of the program.

#### iv) History, Ramp-Up Strategy and Milestones

PGW launched ELIRP in January, 2011. The previous CWP contracts were extended from September 1, 2010 to January 1, 2011. However, the previous CWP cap of 25% on pilot program measures was removed and the contractors provided pilot program measures as needed, as well as other core measures required. Any services provided through the CWP before January 1, 2011 were included in regular LIURP reporting but were not counted as part of the DSM Portfolio or the ELIRP.

Prior to launch, PGW selected three CSPs to administer ELIRP pursuant to an RFP process. Multiple CSPs were selected in order to foster competition and have a basis for comparing program results. The three CSPs selected were the Energy Coordinating Agency (ECA), CMC Energy Services (CMC) and The Mark Group (Mark Group). They were each awarded part of the contract for 60%, 30% and 10%, respectively. The allocations were based on their ability to carry out the services described in the RFP.

After one week of training organized by PGW and conducted by an outside vendor, each contractor began work in January, 2011.

<b>Task</b>	<b>Time Period</b>
Extended current CWP contract with ECA and Honeywell.	September 1, 2010
Developed details for expanded implementation contractor scope of work	July 23, 2010 – August 31, 2010
Generated database of highest-use customers and normalized gas usage	August 13, 2010 – August 27, 2010
Developed ex-ante savings calculation protocols, finalize inspection and verification protocols, and develop evaluation study research agenda	August 13, 2010 – September 17, 2010
Issued RFP for implementation contractors	September 1, 2010
Secured implementation contractors for expanded program	October 6, 2010 – December 16, 2010
Pre-launch planning, training, and infrastructure development between PGW and CSPs	December 16, 2010 – January 14, 2011
<b><i>Launched Program</i></b>	<b><i>January, 2011</i></b>
Develop scope of work for evaluation contractor(s)	December 2011

<b>Task</b>	<b>Time Period</b>
Issue RFP for evaluation services	June 6, 2011
Secure evaluation contractor(s)	August, 2011
<i>Submit first ELIRP impact evaluation study</i>	<i>Early 2013</i>

### **v) Target Market and Program Eligibility**

The following additions were made to the eligibility criteria:

- Building must be a safe work environment
- Building must be in reasonable state of repair or the necessary repairs to building must be cost effective given the entire treatment package. Program can sometimes refer customers to coordination partners to receive general repairs, provided coordination partners' criteria are met.
- Treatment must not place undue burden on resident. Health of occupants and reasonable accommodations are considered during the selection process.

### **vi) Target End-use Measures**

There were no updates to the target end-use measures.

### **vii) Incentive Strategy**

There are no updates to the incentive strategy.

### **viii) Roles and Responsibilities**

Pursuant to an RFP process, PGW selected three implementation CSPs to deliver home energy audits and install measures identified as cost-effective at no cost to customers. The CSPs bill PGW for the cost of services and provide regular reports on program activity and market acceptance.

PGW also selected an inspection CSP, Conservation Services Group, pursuant to an RFP process. The inspection CSP is responsible for examining the work done by the implementation CSPs and reporting those results to PGW.

### **ix) Marketing Strategy**

No marketing plan will be prepared for the ELIRP since services will be provided automatically based on the eligibility criteria.

**x) Coordination with other Programs**

<b>Program/Organization</b>	<b>Description of Coordination</b>
Energy Coordinating Agency (ECA) and the Philadelphia Housing Development Corp. (PHDC)	PGW will be coordinating with the two Philadelphia WAP agencies, ECA and PHDC, in selecting and potentially treating low-income CRP households within the ELIRP.
Philadelphia Department of Public Health Green & Healthy Homes and Lead Poison Prevention Programs	ELIRP contractors refer customers to the Health Department for particular housing health and safety problems. The Health Department is then able to correct these problems for residents, which allows PGW to treat the customer under the ELIRP.
PWIB/PWDC Careerlink	PGW has partnered with PWIB/PWDC PA Careerlink Philadelphia to connect local unemployed workers with weatherization training programs and then onto employment with our ELIRP CSPs
PECO's CFL Initiative	A partnership arrangement is being pursued in which up to ten incandescent bulbs per home will be replaced with CFLs working with PECO.
Philadelphia's Basic System Repair Program (BSRP)	PGW engaged in conversations regarding a potential partnership with the City's Basic System Repair Program. Due the specifics of BSRP, an arrangement has not yet been feasible; however PGW will continue to seek ways to coordinate programming between the DSM and BSRP.

**xi) Evaluation, Monitoring, and Verification**

Quality Assurance

In fall of 2010 PGW hired VEIC to conduct additional inspections on CWP houses. PGW requested these inspections for two purposes:

- An impact evaluation of CWP activity from 2008, performed by M. Blasnik & Associates, showed that that, while remaining cost-effective overall, some issues existed regarding the effectiveness of individual treatments. A group of CWP

houses treated in 2008 was chosen for follow-up, on-site inspections in order to obtain further information.

- To identify learning opportunities from the results of the 2008 CWP jobs to be used in further improving the weatherization cost-effectiveness of the ELIRP treatments going forward.

The inspections revealed three areas that needed improvement: identification of appropriate air sealing opportunities, air sealing installation techniques, and overall diagnostic skills.

The findings of the 2010 inspections led PGW to organize a contractor training session in January for all the ELIRP contractors. The training consisted of a day and a half of classroom session, and an additional full-day of on-site training for each contractor. The classroom sessions covered the basics of building science, the thermal boundary, cost-effectiveness, and best practices. On their assigned day in the field, the contractors each treated one home in the morning and one in the afternoon with a trainer on site. The trainer observed their approach and answered any questions they had. PGW received positive feedback from the contractors, whom all viewed the training as helpful for furthering their understanding of ELIRP and its goals.

Going forward, ELIRP will perform on-site inspections in approximately 10% of treated homes. The field inspections are categorized as an Initial Inspection (may occur with the Contractor present or they may occur at some point after the work is completed), a Re-Inspection (report on the status of remediation of any deficiencies found in the Post-Completion Inspection), or as On-site Mentoring (the inspector is on site while the contractors are installing measures and provides guidance). Conducting using this three-pronged approach will instill ongoing systemic improvements in terms of both strategies of approaches to the work and the execution of individual treatments; greater energy savings should be achieved as a result.

### Data Collection

The implementation CSPs provide PGW with field visit data on a weekly basis. Selected screen shots of the system are provided as Appendix I.

### Reporting

There are no updates to planned reporting for the ELIRP.

### Evaluation

PGW has conducted extensive evaluation of its low-income program. PGW will continue to use the results of independent evaluation to update savings estimates and redirect program activities.

The next impact evaluation for the ELIRP is scheduled to cover calendar year 2011 and will be available in early 2013.

## ***B. Residential Heating Equipment Rebates Program***

### **i) Program Description**

The Residential Heating Equipment Rebates program (RHER) will issue prescriptive rebates on premium efficiency gas appliances and heating equipment to increase the penetration of these measures in the homes of PGW's customers. The program has the following objectives:

- Promote the selection of premium efficiency residential models at the time of purchase of residentially-sized gas heating equipment
- Increase consumers' awareness of the breadth of energy efficiency opportunities in their homes
- Strengthen PGW's relationship with customers as a partner in energy efficiency
- Encourage market actors throughout the supply chain to provide and promote high efficiency options
- Align incentives with other programs
- Aid in market transformation towards highest-efficiency options

Eligible customers will use a certified contractor to install the premium efficiency equipment and receive cash rebates to offset most of the incremental cost of the higher efficiency equipment. The program is scheduled to begin offering rebates in April of 2011.

### **ii) Costs, Benefits, and Impacts**

Over FY 2011 to FY 2015, the program is expected to provide net present benefits of \$22.8 million with a benefit-cost ratio (BCR) of 2.33, making it extremely cost-effective. The program aims to serve 1,138 customers in FY 2012, with associated annualized gas savings of 31.6 BBtu, or 27.8 MMBtu/customer. The program is projected to cost \$510,389. Table 16 shows a detailed breakout of participation, costs, and savings.

#### **Table 16. Projected FY 2012 Impacts for the RHER Program**

	<b>FY 2012</b>
<b><i>PARTICIPATION</i></b>	
Applications	n/a
Customers with Installations	1,138
<b><i>COSTS</i></b>	
Customer Incentives	\$ 678,370
Administration and Management	\$ 37,862
Marketing and Business Development	\$ 100,000
Contractor Costs	\$ 5,834
Inspection and Verification	\$ 3,255
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ 825,321</b>
Participant Costs	\$ 868,192
<b>Total</b>	<b>\$ 1,693,514</b>
<b><i>BENEFITS</i></b>	
Net Annual BBtu	31.6
Net Lifetime BBtu	699.4
Net Annual MMBtu / Customer	27.8
Weighted Lifetime (years)	22.1

As of February 28, 2011, RHER had not launched and therefore no results can be presented. Table 17 demonstrates the format of how future results will be presented.

**Table 17. Quantitative RHER Impacts from Inception to February 28, 2011**

	<b>FY11 To February 28</b>
<b><i>PARTICIPATION</i></b>	
Applications	-
Customers with Installations	-
<b><i>COSTS</i></b>	
Customer Incentives	\$ -
Administration and Management	\$ -
Marketing and Business Development	\$ -
Contractor Costs	\$ -
Inspection and Verification	\$ -
On-site Technical Assessment	\$ -
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ -</b>
Participant Costs	\$ -
<b>Total</b>	<b>\$ -</b>
<b><i>BENEFITS</i></b>	
Net Annual BBtu	-
Net Lifetime BBtu	-
Net Annual MMBtu / Customer	-
Weighted Lifetime (years)	22.1

The following qualitative RHER Developments have occurred in FY11 through February 28, 2011:

- Selected a rebate vendor, Helgeson Enterprises, to implement the rebate processing.
- Began marketing and outreach efforts to provide information to HVAC contractors allowing them to educate their customers about our rebates.
- Contacted suppliers in the region to gather information on the existing local market and to provide information on our rebate program and the expected impact on their sales
- Launched RHER on April 1, 2011.

### **iii) Workflow**

The following steps describe the delivery of services for the RHER:

- Customers are made aware of the program through various marketing channels, including efforts by the CSP, the Company, contractors, and equipment dealers.
- The customer obtains information pertaining to eligibility and measures covered by the program from the CSP, the Company, contractors, equipment dealers or the PGW website. This information includes a document describing eligible measures and how to obtain an application form (applications will be available in both electronic and hard copy).
- Customers work with contractors and retailers to purchase and install the eligible equipment. They then fill out the rebate application and submit the form, along with proof of purchase and the contractor's contact information.
- The CSP processes the application, checking customer and measure eligibility. If the application meets program guidelines, a check or Visa card is mailed to the customer. Otherwise, the customer is notified that the rebate application was not accepted and the reason for rejection and an opportunity to apply again.
- A randomly selected group of applications will be selected for a post-installation verification. Please see the Evaluation, Monitoring, and Verification section of this program for additional details.

### **iv) History, Ramp-Up Strategy and Milestones**

The program will begin accepting rebate applications in April of 2011, giving program participants time to prepare for the 2011-heating season. The amount of rebates offered in the first year will be smaller than those offered in future years, as customers gain awareness of the program and the CSP works out any issues with service delivery. The pace of rebates is expected to double by FY 2012, and increase another 50% by 2013 as



the DSM portfolio matures and larger budgets can be supported. The following table shows the timeline for this program.

<b>Task</b>	<b>Time Period</b>
Finalize qualified equipment and incentive amounts	August 6, 2010 – December 1, 2010
Develop ex-ante savings calculation protocols, inspection and verification protocols, and develop evaluation study research agenda	November 19, 2010 – January 28, 2011
Develop detailed implementation and marketing contractor scopes of work	October 11 2010 – November 22, 2010
Issue RFPs for implementation and marketing service contracts	November 24, 2010
Secure implementation and marketing CSP(s)	December 27, 2010 – January 20, 2011
Contact equipment vendors to ensure they have rebate equipment in-stock	January 24, 2011- February 7,2011
Pre-launch planning, training, and infrastructure development between PGW, CSP(s), and market actors	January 1, 2011 – March 28, 2011
<b><i>Launch Program</i></b>	<b><i>April 1, 2011</i></b>
Select evaluator and contract for services	December 1, 2011 – January 1, 2012
Submit first RHER impact evaluation study	Early 2013

### **v) Target Market and Program Eligibility**

The program’s target market is a PGW customer purchasing residential-sized, high efficiency space and water heating equipment. To be eligible for a rebate, a participant must be a customer of PGW. Owners and renters, with the approval of the owner, are both eligible. Additionally, an individual customer may only receive one rebate per category, space heating and water heating, in any given calendar year in order to reach the maximum amount of customers possible. Only equipment installed after the start date of the program, April 1, 2011, will be eligible for a rebate.

#### Customer Eligibility Parameters

*Customer Type:* Residential and Small Commercial

*Rate Class:* GS Residential, PHA-GS

*Building Type:* All

*Building Vintage: All*

*Building Ownership: Owner or tenant with owner approval*

## **vi) Target End-use Measures**

During the past year, PGW performed an in-depth review of the proposed measures from the First Year Implementation Plan. This research included gathering detailed incremental material and labor cost figures and calculating estimated savings from the formulas developed for the TRM. Using this analysis, PGW decided to undergo two major changes. The first change was to focus mainly on space heating. The second change was to position the RHER Program as a market leader by providing incentives only for the highest efficiency levels. The new minimum efficiency levels targeted under the program meet or exceed requirements for Tier 3 equipment as defined by the Consortium for Energy Efficiency (CEE)<sup>14</sup>.

### Domestic Hot Water (DHW)

Many of the efficiency measures that applied to DHW were no longer cost-effective due to new incremental cost information and/or updates to PGW's avoided costs. The exception was for tankless water heaters, a technology that is beginning to gain a foothold in the US marketplace. PGW has two concerns regarding the current tankless water heater market, which have led to postponing rebates on tankless water heaters until FY 2013, at which time the decision will be revisited. The first concern was that the tankless water heaters were only slightly cost-effective and had additional uncertainty regarding the incremental installation costs. This concern is expected to diminish in later years as prices for tankless water heaters continue to drop.

PGW was also concerned about the gas pressure requirements for many models of tankless water heaters currently on the market. These requirements are higher than the current gas pressure requirements in PGW's service territory. In order for these tankless water heaters to work, additional equipment would need to be purchased and installed, making the measure no longer cost-effective. However, in the last year, more models have come on the market that work with the lower gas pressure, a trend which PGW expects to continue.

### Space Heating

PGW gathered price data on natural gas fired furnaces and boilers currently on the market with efficiency levels ranging from 80 AFUE up to 96 AFUE. The new price data was used with savings algorithms developed for the TRM and updated avoided costs to screen the various natural replacement scenarios proposed in the FY 2011 DSM Implementation Plan. This analysis found that furnaces continued to be very cost-effective. Boilers were

---

<sup>14</sup> Higher tiers are more energy efficiency. In general, Tier 3 is the highest efficiency on market, while Tier 0 is the base-line equipment.

also found to be cost-effective, although natural replacement with boilers that have an AFUE above 90 provided significantly more net benefits than boilers with an AFUE in the 85 to 90 range.

The Company also conducted research on the Philadelphia market for natural gas heating equipment. We found that local suppliers have stocked many furnaces with efficiency ratings above 94. For boilers, the efficiency of available models tended to cluster around 82, 85 and 95, with plenty of units available at the 95 AFUE level. PGW also found that Philadelphia has a much higher ratio of boilers to furnaces in existing homes than national averages. This led PGW to revise upwards the projections for how many boiler rebates were expected to be issued, which in turn put pressure the RHER’s limited budget from the higher rebate amounts for boiler compared to furnaces.

Based on this additional research, PGW is offering rebates only for boilers and furnaces that have a minimum AFUE of 94, positioning the RHER as a market leader. Offering rebates for only the highest-efficiency levels allows PGW to focus the message to consumers, simplify contractor and supplier outreach, and streamline the administration of the program while promoting only the most cost-effective measures.

Controls

In order to concentrate efforts and funds on equipment with higher upfront costs and lower turnover, rebates on programmable thermostats will no longer be offered on a standalone basis. Instead, rebates for programmable thermostats will be available as a package with a boiler or furnace rebate. This allows PGW to leverage rebates for boilers and furnaces while reducing processing costs.

Projections

PGW updated participation projections for the RHER to reflect additional research on the Philadelphia natural gas heating equipment market. PGW also considered information provided by the Pennsylvania Department of Environmental Protection’s (PA DEP) on PGW’s service territory’s participation in the Pennsylvania Home Heating Equipment Rebate Program. Table 18 shows projections for each type of rebate.

**Table 18. Projected Rebates for FY 2011 to FY 2015 by Equipment Type**

<b>Measure</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>
Tankless Water Heaters (w/ electronic ignition) 0.82 EF	-	-	243
Natural Gas Furnace 94% AFUE	134	419	977
Natural Gas Furnace 94% AFUE, ECM Fan	67	209	489
Natural Gas Water Boiler 94% AFUE (w/ electronic	175	510	1,173

ignition)			
Programmable Thermostat	125	379	880
<b>Total Rebates Issued</b>	<b>500</b>	<b>1,823</b>	<b>4,688</b>

**vii) Incentive Strategy**

Fixed rebates will be used to streamline program delivery and increase customer participation. The rebates are designed to help customers offset the barriers that the higher costs of the more efficient equipment often pose.

**Table 19. Residential Equipment Rebates**

<b>Measure</b>	<b>Amount</b>
Tankless Water Heaters (w/ electronic ignition) 0.82 EF <sup>15</sup>	\$250
Natural Gas Furnace 94% AFUE	\$250
Natural Gas Furnace 94% AFUE, ECM Fan <sup>16</sup>	\$250
Natural Gas Water Boiler 94% AFUE (w/ electronic ignition)	\$1,000
Programmable Thermostat <sup>17</sup>	\$30

The Company does not plan to modify rebate amounts or measures covered after the plan launches in April of 2011. However, the Company will do a periodic review of the rebates being offered and may change the types of measures covered, the minimum efficiency level required, and/or the rebate amount based on changing market conditions.

**viii) Roles and Responsibilities**

Pursuant to an RFP process, PGW selected an implementation CSP, Helgeson Enterprises to setup and manage the system for providing rebates to customers. The CSP is responsible for the processing of rebate applications from start to finish, including collecting applications, checking eligibility, and either sending a rebate check/VISA card or notifying the applicant with the reason for rejection. The implementation CSP will also monitor program performance and market acceptance, reporting results to the programs administrators.

<sup>15</sup> Not available to customers until FY 2013

<sup>16</sup> Furnaces that have fans driven by Electronically Commuted Motors (ECMs) provide significant electricity savings. However, as a natural gas utility, PGW is unable to provide any additional incentives for measures that purely save electricity.

<sup>17</sup> May only be claimed with an accompanying furnace or boiler rebate

Marketing and communication activities will primarily be carried out by a CSP, though PGW may decide to deliver some services through internal resources or ask Helgeson to subcontract out all or part of these functions to a marketing subcontractor. The marketing services to be delivered include outreach, training, and gaining support from retailers, equipment suppliers, contractors, and customers.

As the program administrator, PGW will oversee the service delivery through regular communications with CSPs and by tracking program data.

Additionally, the Company has contracted with an independent firm to perform on-site verifications for a selection of completed applications.

### **ix) Marketing Strategy**

The CSP and its subcontractor, in coordination with the Company, has crafted a marketing plan that works with equipment manufacturers, distributors, installation contractors and retailers/vendors to make the high-efficiency equipment available for purchase. Engineers and contractors have been encouraged to recommend or specify the choice of high-efficiency equipment to customers making purchases of gas appliances and heating equipment. Based on the experience of other gas utility rebate programs, contractor outreach is the best strategy for increasing customer demand for high efficiency gas equipment via rebates. PGW will utilize this strategy as the primary tool to promote awareness of the RHER. Additional marketing activities will be dependent upon the actual market participation rates. Over- and under-subscription are both concerns, and would require different responses from PGW. This subscription rate uncertainty and the need for adequate time to allow the trends to develop and then respond appropriately is the motivation behind PGW's proposes to treat the RHER's first two years as one combined seventeen (17) month launch year for purposes of budgeting.

Additional marketing activities, if warranted, may include:

- Promotional materials and program information provided at the point-of-sale
- Inclusion in PGW customer communications (i.e. bill inserts, newsletters, etc.)
- An online presence, through the Company's website, and/or a stand-alone site
- Advertising in newspapers, on the radio, and other mass media outlets
- Outreach and coordination with trade groups, community organizations, and other market partners

### **x) Coordination with other Programs**

Program/Organization	Description of Coordination
Pennsylvania's Home Heating Equipment Rebate Program	<p>As of now, Pennsylvania's Home Heating Equipment Rebate Program has exhausted or fully committed all funding.</p> <p>Regardless, PGW will continue to remain in contact with the State Department of Environmental Protection (DEP) regarding coordination and to determine if there are future partnering opportunities for RHER, or any of the other DSM programs.</p>
Federal Tax Credits for Energy Efficiency	<p>Two 2011 Federal Tax Credits for Energy Efficiency cover the same equipment as the RHER. Since eligibility criteria may differ, rebate application material will provide language notifying customers that specific equipment may be covered by federal tax credits and direct them to the appropriate information. The 2011 credits include:  Hot Water Boiler: \$150 for AFUE at least 95.  Natural Gas Furnace: \$150 for AFUE at least 95.</p> <p>For post 2010, there is a \$500 lifetime limit on federal tax credits.</p>
EnergyWorks Residential	<p>Energyworks provides low-interest loans for residential equipment and retrofits, administered through Keystone HELP. PGW will provide information to customers regarding this financing opportunity.</p>

PGW also intends to allow RHER rebates to be used in conjunction with the Company's existing oil-to-gas rebate program. The existing oil-to-gas program identifies a niche market of customers currently considering a natural gas heating equipment purchase, without any regards to efficiency. By allowing the rebate programs to be used in conjunction, PGW is able to effectively and efficiently serve the EnergySense RHER primary purpose: to convince customers currently in the market for natural gas heating equipment to purchase the most energy-efficient models possible, rather than the inefficient and cheaper models they may otherwise select.

## **xi) Evaluation, Monitoring, and Verification**

### Quality Assurance

PGW will monitor the ongoing progress of the program and work closely with the CSPs to provide the highest possible service to its customers. PGW will track rebate application data and provide regular impact evaluations that will be supplemented by more in-depth, biennial process evaluations performed by a third-party evaluator. To insure that measures are installed correctly the HAVC installation contractor's license number and contact information must be included on the application. Helgeson will be utilizing protocols and software in order to detect and prevent potential cases of fraud; examples include recognition to prevent duplicate account numbers and addresses from redeeming more than one rebate. Helgeson's staff is also trained to recognize forged proof of purchases and other counterfeit attempts.

In addition to Helgeson's fraud prevention, a 3rd party vendor will perform on-site visits on a random selection of projects to verify that the documented measures are present and are covered by the program. The PGW program administrator will provide the vendor with a list of applications that require verification. The verification includes two parts:

- 1) Validation of application information
  - a. Validate customer data is correct
  - b. Check that installed equipment matches information on application
  - c. Confirm with customer the information regarding the installation contractor
  
- 2) Checking on quality of service
  - a. Collect feedback from customer

### Data Collection

Helgeson Enterprises will provide PGW with program activity data for populating the DSM Tracking System. Data is captured in over 40 standard on-line reports. Helgeson will provide a range of data on increments set by PGW, including a reject report (reasons that applications were denied); a validation report, and a check reconciliation report. Helgeson also provides an ongoing query based report generator that PGW staff can access at anytime.

This data will be used for the purposes of aggregating information for ongoing performance reports as well as to identify developing trends that can be leveraged in further improving the program's effectiveness.

### Reporting

There are no updates to reporting for the RHER.

### Evaluation

In line with evaluation activities performed in the past for the CWP and planned for the ELIRP, the program will undergo an in depth impact evaluation every two years. Pursuant to an RFP process, PGW is seeking an independent evaluator to perform the biennial process evaluation. As part of the initial program development, PGW will work with the evaluator to establish the methodology and goals of the process evaluation. Initial objectives include determining:

- What is the market share of premium-efficiency equipment targeted by the program relative to lower-efficiency equipment sold before program initiation?
- How much gas did the premium-efficiency equipment save relative to lower-efficiency equipment purchased by customers who did not participate in the program?
- How satisfied were participants in the program with their premium-efficiency equipment compared with customers who bought less-efficient equipment and did not participate in the program?
- Explanations for why customers in the market for new furnaces, boilers, or water heaters did not participate in the program?
- What obstacles do trade allies (contractors, equipment wholesalers) perceive to selling more premium-efficiency equipment?
- What percentage of rebated heating systems required new venting systems that would not have been required if replacing with a standard efficiency system? How much did the additional venting cost?
- What percentage of furnaces and boilers installed because of the program complied with the Air Conditioning Contractors of America's (ACCA) Manual J load size?

The first impact evaluation for the program is scheduled for FY 2013, during the end of calendar year 2012 and early



## **Plans for Programs Launching in FY 2012**

### ***A. Commercial and Industrial Retrofit Incentives Program***

#### **i) Program Description**

The Commercial and Industrial Retrofit Incentives Program (CIRI) promotes natural gas energy efficiency retrofit investments by PGW's multi-family residential, commercial, and industrial customers. The program provides technical assistance and customized financial incentives for cost-effective gas-saving investments including high-efficiency heating system replacements, improved system controls, and building thermal performance enhancements. The program also assists participants in arranging financing for the balance of project costs through partnerships with third-party lenders. The program has the following objectives:

- Save natural gas through cost-effective energy efficiency retrofit projects.
- Make comprehensive energy-efficiency retrofit affordable by combining customized financial incentives with third-party financing to provide participating customers with immediate positive cash flow.
- Promote a better understanding of energy efficiency options available to PGW's nonresidential customers.

This CIRI will seek to convince facility managers, department heads, and financial officers to conduct audits of their facilities and identify cost-effective energy saving retrofit opportunities. The initial phase of the program will specifically target energy efficiency opportunities in multi-family buildings. As the program ramps, up additional commercial and industrial customer classes will be targeted.

PGW will selectively target eligible buildings for participation. PGW will engage one or more technical assistance providers to identify retrofit opportunities and estimate their costs and savings. Using a project economic and financial analysis tool, PGW will assess the cost-effectiveness of the prospective efficiency investments and devise a customized financial incentive for the entire project.

PGW will explain the results of the technical and financial assessment of the retrofit investment to the customer, demonstrating how the financial incentive coupled with financing will yield positive cash flow immediately. PGW will help the customer arrange for a loan with a term one year longer than the simple payback period of the project after.

PGW will provide the financial incentive to the customer or its lender upon final inspection of the installation.

## **Program Staging**

Given the anticipated size of the projects and funding limitations, the program can only accommodate a small number of projects, particularly during the first year of the program. FY 2012 will focus on retrofits to three multifamily buildings -- two with smaller multifamily buildings<sup>18</sup> and one with a large multifamily building<sup>19</sup>.

In the second year of the program (FY 2013), PGW will begin working on projects for commercial as well as multifamily customers. PGW will expand on experience from FY 2012 by working with mixed-use residential/commercial buildings as well as with retailers, hospitality providers, and office buildings. In the third and fourth years of the program (FY 2014 and FY 2015), the program will be expanded to warehouses and industrial facilities.

Due to the program's limited budget, PGW will only be able to complete a few projects within each building type in a given year. As the program matures, the main area of expansion will be the range of building types that will receive assistance, as opposed to capturing an increasing percentage of the eligible population. In all, we estimate that the program will treat three-dozen buildings over four years.

### **ii) Costs, Benefits, and Impacts**

Over FY 2011 to FY 2015, the program is expected to provide lifetime net present benefits of \$1.16 million with a benefit-cost ratio (BCR) of 1.40. The program aims to serve 3 multi-family customers in FY 2012, with associated annualized gas savings of 5.4 BBtu, or 1.8 MMBtu/customer. The program is projected to cost \$163,300 in FY 2012. Table 20 shows a detailed breakout of participation, costs, and savings.

---

<sup>18</sup> From 4 to 20 units

<sup>19</sup> Over 20 units

**Table 20. Projected FY 2012 Impacts for the CIRI Program**

	<b>FY 2012</b>
<b><i>PARTICIPATION</i></b>	
Analyses/Audits	n/a
Customers with Installations	3
<b><i>COSTS</i></b>	
Measure Installation Costs	\$ 77,313
Administration and Management	\$ -
Marketing and Business Development	\$ 50,000
Contractor Costs	\$ 32,827
Inspection and Verification	\$ 3,163
Evaluation	\$ -
<b>Utility Costs</b>	<b>\$ 163,304</b>
Participant Costs	\$ 154,627
<b>Total</b>	<b>\$ 317,930</b>
<b><i>BENEFITS</i></b>	
Net Annual BBtu	5.4
Net Lifetime BBtu	80.7
Net Annual MMBtu / Customer	1,794.0
Weighted Lifetime (years)	15.0

**iii) Workflow**

PGW’s technical assistance contractor(s) identify and analyze natural gas retrofit opportunities. This will require onsite visits to collect data for estimating efficiency investment costs and savings. PGW staff will conduct the economic and financial analysis of projects, and customize financial incentives for projects combined with financing structured to achieve positive cash flow. All of these activities will be coordinated with any firms that the customer has already retained for similar analysis.

The following steps describe the delivery of services for the CIRI:

- PGW will identify high usage commercial and industrial premises (with special emphasis on multi-family premises) that the Company believes could benefit from energy efficiency retrofit measures.
- PGW’s technical assistance provider will audit the customer’s premise to determine what energy savings opportunities are available.
- PGW and PGW’s technical assistance provider will work together to determine the achievable technical and economic savings and determine cost effectiveness.

- PGW and PGW’s technical assistance provider will present the results of the audit and economic analysis to the customer.
- PGW will work with the customer to determine the incentive level required for the customer to undertake the recommended energy efficiency measures. PGW will also assist in identifying feasible financing products, if need be. PGW will design an incentive to meet the customer’s need.
- PGW and PGW’s technical assistance provider will work with the customer to install the measures.
- PGW’s inspector will ensure that measures were installed correctly and appropriately.

**iv) History, Ramp-Up Strategy and Milestones**

The Commercial and Industrial Retrofit Incentives Program will be the third program launched under PGW’s DSM Portfolio. The bulk of program design activities occur during FY 2011 and detailed plans are included in this Implementation Plan. The program is expected to launch at the end of September 2011, which is the beginning of FY 2012.

<b>Task</b>	<b>Time Period</b>
Develop detailed program designs, ex-ante savings calculation protocols, inspection and verification protocols, and develop evaluation study research agenda	January 17, 2011 to January 28, 2011
Identify and work with lending institutions to construct a range of services for providing nonrecourse loans with varying terms.	January 17, 2010 to April 17, 2011
Issue RFP(s) and contract with lending institution(s) for financial services relating to the program.	April 28, 2011 to July 10, 2011
Develop implementation CSP(s) scope of work	April 30, 2011 to May 21, 2011
<b><i>File plan as part of “Annual FY 2012 Implementation Plan”</i></b>	<b><i>April 30, 2011</i></b>
Issue RFP for implementation CSP(s)	May 21, 2011 to June 11, 2011
Secure implementation CSP(s)	June 11, 2011 to August 2, 2011

<b>Task</b>	<b>Time Period</b>
Pre-launch planning, training, and infrastructure development between PGW, CSP(s), and market actors	July 11, 2011 to September 1, 2011
<b><i>Launch Program</i></b>	<b><i>September 1, 2011</i></b>
Select evaluator and contract for services	September 4, 2011 – October 9, 2011
Submit first CIRI impact evaluation study	Early 2014

**v) Target Market and Program Eligibility**

Multi-family, commercial, industrial customers of PGW will be eligible for the program. This includes both firm heating and firm non-heating customers. Non-firm customers are also eligible for participation.

Philadelphia’s municipal customers, such as schools and hospitals, represent an attractive source of potential savings. However, discussion with parties last year indicated that significant funding for this market was already available through American Recovery and Reinvestment Act (ARRA) programs. Consequently, PGW has decided for now that additional services are not warranted. PGW reserves the right to revisit this decision in the future, especially as available ARRA funding is exhausted.

**vi) Target End-use Measures**

The measures will be customized for each project. Typical examples include heating system retrofits and shell improvements.

**vii) Incentive Strategy**

The CIRI will provide custom incentives for the natural gas portion of the retrofit projects and will help coordinate project financing as well as incentives for the electric portion of the project.

Incentives

Customers will be offered customized financial incentives that will typically amount to one-third (33.3%) of the total installed cost. This is the estimated amount needed to buy the project’s simple payback period down to less than the loan term available for financing the balance of the project’s cost. The total project must be cost effective according to the Total Resource Cost (TRC) test<sup>20</sup> in order to be eligible to receive financial incentives.

---

<sup>20</sup> That is, have a TRC benefit to cost ratio greater than 1

Since the number of projects in a given year will be so small, there will be no explicit cap on incentives for individual projects. PGW will use its discretion in weighing the rebate amount offered for a single project against existing budgets and participation goals.

In some instances, the customer may be referred to other programs for other rebates. Other relevant rebates could be prescriptive ones provided by PGW, such as PGW's RHER program, or rebates provided by other programs not run by PGW.

### Financing

PGW will work with third-party lenders to establish a way for program participants to borrow the balance of the money required to fund the project on terms that will provide positive cash flow. Potential lending partners include banks, credit unions, State or Federally funded programs, equipment manufacturers with financing arms, and equipment lessors. There are two approaches that lenders will take with CIRI customers:

- 1) Streamline the application process to an existing lending facilities
- 2) Establish a dedicated facility that provides funding for energy efficiency retrofits

Ideally, financing will be made available with the following features:

- Loan term based on the simple payback of the project after the PGW financial incentive, plus twelve (12) months
- Competitive or below market interest rates
- Unsecured

PGW will explore all possible options for securing financing assistance, including through the Philadelphia region's newly launched EnergyWorks low-interest loan programs.

## **viii) Roles and Responsibilities**

### PGW

The Company will handle most of the day-to-day work and responsibilities for CIRI in-house.

Specifically, PGW will oversee program administration. This will include overseeing the RFP process and selecting contractors, supervising the day-to-day activities of contractors and making changes where necessary, processing payments to contractors, managing contractor coordination within the program, portfolio, and with other programs, tracking data related to program activity, and preparing reports for submission to regulators.

The Company will also be responsible for calculating and processing custom rebates. This will include providing project-level economic and financial analysis using tools provided by the program development consultant, working with customers to agree on an acceptable custom rebate, tracking rebate status, providing customer and contractors support regarding rebates, including notifying contractors and customers of any issues,

coordinating inspections, remitting rebate payments and providing and collecting surveys in rebate communications.

Additionally, the Company will also work to coordinate with lending institutions. These activities will include reaching out to lenders to secure partnerships, working with applicants to meet lender requirements, referring eligible applicants to lenders, assisting applicants prepare documentation, and coordinating marketing activities with the lenders.

Finally, the Company will conduct marketing and outreach. This will include reaching out to trade allies and customers through informational sessions, trade shows, and direct mailing, maintaining the program's web presence, delivering email, call, and direct mailing campaigns, interfacing with the media, and coordinating marketing and outreach efforts with other programs

#### Program Development Consultants

Program Development Consultants will assist PGW in providing economic and financial analysis of the program and its projects. This will include providing project financial and economic analysis tools, training PGW staff on the use of the provided tools and providing analysis assistance on individual projects as needed, reviewing project cost and savings calculations, helping analyze program-level results, and providing assistance with engaging lending institutions.

#### Technical Assistance Provider(s)

Local and regional engineering firms will be solicited to provide technical assistance on projects. The selected provider(s) will be responsible for collecting project information through site visits and communication with the customer and his or her contractors, analyzing natural gas retrofit opportunities, and providing PGW with the results of their analysis

The technical assistance provider(s) should be familiar with natural gas retrofit opportunities and issues relating to the commercial and industrial markets This includes space heating and hot water system retrofits (including early retirement of existing heating equipment, advanced controls), building shell improvements (insulation, air-sealing), split incentives between tenants and building owners, and maintenance issues

#### Lending Institutions

The lending institutions will be responsible for funding the loan pool, processing loan applications, and servicing the loan,

#### Inspector

Inspectors will be responsible for verifying application materials, conducting brief interviews with customers and, if possible, contractors, checking that installation followed state and local codes and informing clients of any violations, and reporting findings and issues to program administrators

#### Evaluator

The evaluator will be responsible for analyzing pre and post usage data of participants, analyzing program tracking data, conducting follow-up interviews with customers, if necessary, and reporting findings to program administrators

**ix) Marketing Strategy**

PGW will recruit participants through targeted outreach. Externally, PGW could solicit applications through organizations and associations that are involved with the retrofit of multifamily, commercial, and industrial buildings. Internally, PGW could refer customers to the CIRI who call with complaints about high usage and/or bills, or inform customers in targeted market segments about opportunities through their existing account representative.

PGW will document and publicize case studies from each year to build future demand, posting results on its website and hopefully generating media coverage.

**x) Coordination with other Programs**

Program/Organization	Description of Coordination
EnergyWorks	The Philadelphia regional EnergyWorks program currently provides low-interest financing for both residential and commercial/industrial sized energy-efficiency projects. PGW will continue discussions with EnergyWorks representatives regarding a potential partnership in which PGW’s EnergySense would provide up-front financial assistance to make projects viable and EnergyWorks would provide low-interest financing to initially fund the projects.
Pennsylvania Housing Finance Authority	PHFA currently provides funding assistance for multifamily residential energy-efficiency projects through their Smart Rehab program. The overlap between PHFA’s Smart Rehab and PGW’s CIRI presents a significant coordination opportunity.
The City of Philadelphia	The City of Philadelphia currently provides several small business funding assistance programs, including for energy-efficiency projects. PGW will attempt to identify opportunities for partnership with the City’s existing programs.



Program/Organization	Description of Coordination
Federal Tax Deductions and Credits	A tax deduction of up to \$1.80 per square foot is available to owners or designers of new or existing commercial buildings that save at least 50% of the heating and cooling energy of a building that meets ASHRAE Standard 90.1-2001. Partial deductions of up to \$.60 per square foot can be taken for measures that save at least 16.2/3% of total building energy and affect any one of three building systems: the building envelope, lighting, or heating and cooling systems.

## **xi) Evaluation, Monitoring, and Verification**

### Quality Assurance

An on-site inspection will be performed on every building project. The inspection may be performed both during and after the installation, since some larger projects may require oversight at different stages of the project. Inspections allow PGW to validate that the correct equipment was installed and that it is in working order.

### Data Collection

PGW will collect and store information provided by potential customers on applications. The Company may also collect application information from third-party financial institutions in order to avoid burdening customers with duplicate application efforts. Information that will be collected through applications and stored in the DSM database include:

- Customer information such as name, organization, contact information, and premise information
- An overview of the potential project including expected budget, timeframe, and expected payback period.
- A list of the measures that are being considered for the project.

PGW will work with the technical assistance coordinator to collect additional details on the premise and potential measures that make up the project in order to confirm and expand on the information submitted by applicants. This information will be put into an Excel-based tool used by PGW to perform custom project economic and financial analysis. The tool will document the sources for various inputs and PGW will save each initial project analysis tool for comparison to the finished project.

If the customer takes out a loan to fund the project, PGW will work with the customer and the lender to collect information relating to the terms of the loan.

After a project is completed, an inspector will perform on-site verification of every project. The data collected during this inspection and stored by PGW will include

- Documentation of the projects costs
- Specifics on the installed measures, including the data required by the project economic and financial analysis tool
- Information on the quality of the installation and the viability of achieving projected savings
- Results from interviews with customers and contractors

### Reporting

As part of the Annual Reporting process, PGW will provide regular reports of the programs impacts. Deemed savings will be calculated using the values established in the TRM, and formulas will be updated as the TRM changes. Only projects that have been will impact saving amounts. Figures showing the pipeline of projects as well as the number of rejected projects will be provided along with realized costs. Findings from on-site inspections will be primarily used in the program's impact evaluations.

### Evaluation

In accordance with the general evaluation plans for the Demand Side Management (DSM) Portfolio, a third-party contractor will perform in-depth evaluations every two years. The first evaluation for the CIRI is scheduled for FY 2014

## Plans for Programs Launching in FY 2013 to FY 2015

This section provides information on programs in the DSM Portfolio that will launch services in FY 2013 through FY 2015. At this time, PGW has not made any modifications to the implementation plans for any of these programs beyond updating each program's implementation schedule.

### **A. Commercial and Industrial Equipment Rebates Program**

There are no updates to the plans included in the First Year Implementation Plan for the Commercial and Industrial Equipment Rebates Program except for an updated implementation schedule.

#### **i) Updated Planning and Implementation Timeline**

Beginning in January of 2012, detailed program plans for the PECIEP will be developed. Plans for the program launch will be included in the Annual FY 2013 Implementation Plan. The program launches in the beginning of November 2012, a few months into FY 2013.

<b>Task</b>	<b>Time Period</b>
Develop detailed program designs, ex-ante savings calculation protocols, inspection and verification protocols, and develop evaluation study research agenda	December 1, 2011 to July 1, 2012
Develop implementation CSP(s) scope of work	May 1, 2012 to May 23, 2012
<i>File plan as part of "Annual FY 2012 Implementation Plan"</i>	<i>April 30, 2012</i>
Issue RFP for implementation CSP(s)	May 23, 2012 to June 22, 2012
Secure implementation CSP(s)	June 22, 2012 to August 1, 2012
Pre-launch planning, training, and infrastructure development between PGW, CSP(s), and market actors	January 1, 2012 to September 13, 2012
<i>Launch Program</i>	<i>September 13, 2012</i>

<b>Task</b>	<b>Time Period</b>
Select evaluator and contract for services	October 31, 2012 to December 5, 2012
Submit first HECI impact evaluation study	Late 2014

## ***B. High Efficiency Construction Incentives Program***

There are no updates to the plans included in the First Year Implementation Plan for the High Efficiency Construction Incentives Program except for an updated implementation schedule.

### **i) Updated Planning and Implementation Timeline**

Detailed program design for the program will be completed for the Annual FY 2013 Implementation Plan. Contractors will be selected and services launched at the same time as the PECIEP to ensure that customers will have a larger menu of prescriptive rebates to complement the other incentives offered by HECI.

<b>Task</b>	<b>Time Period</b>
Develop detailed program designs, ex-ante savings calculation protocols, inspection and verification protocols, and develop evaluation study research agenda	June 1, 2011 to April 21, 2012
Develop implementation CSP(s) scope of work	March 17, 2012 to April 7, 2012
Issue RFP for implementation CSP(s)	April 7, 2012 to April 28, 2012
<b><i>File plan as part of “Annual FY 2012 Implementation Plan”</i></b>	<b><i>April 30, 2012</i></b>
Pre-launch planning, training, and infrastructure development between PGW, CSP(s), and market actors	May 16, 2012 to September 8, 2012
Secure implementation CSP(s)	June 15, 2012 to July 5, 2012
<b><i>Launch Program</i></b>	<b><i>September 12, 2012</i></b>
Select evaluator and contract for services	September 15, 2012 to October 20, 2012
Submit first HECI impact evaluation study	Late 2014

### **C. Comprehensive Residential Retrofit Incentives Program**

There are no updates to the plans included in the First Year Implementation Plan for the Comprehensive Residential Retrofit Incentives Program except for an updated implementation schedule.

#### **i) Updated Planning and Implementation Timeline**

In accordance with the settlement agreement, PGW will delay the launch of the CRRI until the middle of FY 2013. In the lead up to and during plan development, PGW will work closely with the ELIRP’s existing CSPs to leverage the recent experience current contractors have had working in the same market. Initial plan details will be included in the Annual FY 2013 Implementation Plan and program services will launch in March of 2013.

<b>Task</b>	<b>Time Period</b>
Develop detailed program designs, ex-ante savings calculation protocols, inspection and verification protocols, and develop evaluation study research agenda	August 1, 2011 to February 5, 2013
Identify and work with lending institutions to construct a range of services for providing nonrecourse loans with varying terms.	May 19, 2012 to December 5, 2012
Develop implementation CSP(s) scope of work	August 29, 2012 to October 24, 2012
<b><i>File plan as part of “Annual FY 2012 Implementation Plan”</i></b>	<b><i>April 30, 2012</i></b>
Issue RFP for implementation CSP(s)	May 2012 to June, 2012
Secure implementation CSP(s)	June, 2012 September 2012
Pre-launch planning, training, and infrastructure development between PGW, CSP(s), and market actors	August 9, 2013 to February 4, 2013
Select evaluator and contract for services	December 9, 2012 to January 13, 2013
<b><i>Launch Program</i></b>	<b><i>February 4, 2013</i></b>
Submit first CIRI impact evaluation study	Late 2014

# Appendices

## A. Table of Avoided Costs

All Avoided Costs Are in Constant 2009 Dollars

Period:	Electric Avoided Costs including losses		Natural Gas Avoided Costs			Other Resource Avoided Costs
	All-Year Energy	Summer Generation Capacity	NG Base	NG Space Heat	NG DHW	Water
	Units: \$/kWh	\$/kW-yr	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/gal
2010	0.0602	85.05	5.08	6.30	5.39	\$ 0.0100
2011	0.0632	66.60	5.27	6.51	5.58	\$ 0.0100
2012	0.0640	53.12	5.45	6.64	5.74	\$ 0.0100
2013	0.0641	57.52	5.53	6.67	5.82	\$ 0.0100
2014	0.0656	64.00	5.84	7.00	6.13	\$ 0.0100
2015	0.0679	64.00	6.18	7.39	6.48	\$ 0.0100
2016	0.0705	64.00	6.46	7.69	6.77	\$ 0.0100
2017	0.0738	64.00	6.69	7.95	7.00	\$ 0.0100
2018	0.0775	64.00	6.90	8.19	7.22	\$ 0.0100
2019	0.0813	64.00	7.13	8.45	7.46	\$ 0.0100
2020	0.0816	64.00	7.36	8.70	7.70	\$ 0.0100
2021	0.0806	64.00	7.56	8.92	7.90	\$ 0.0100
2022	0.0826	64.00	7.64	9.01	7.99	\$ 0.0100
2023	0.0850	64.00	7.62	8.99	7.97	\$ 0.0100
2024	0.0902	64.00	7.66	9.03	8.00	\$ 0.0100
2025	0.0947	64.00	7.79	9.18	8.14	\$ 0.0100
2026	0.0992	64.00	7.94	9.34	8.29	\$ 0.0100
2027	0.1037	64.00	8.14	9.57	8.50	\$ 0.0100
2028	0.1077	64.00	8.38	9.83	8.74	\$ 0.0100

## ***B. List of Acronyms***

<b>Acronym</b>	<b>Meaning</b>
ACEEE	American Council for an Energy Efficient Economy
ARRA	American Recovery and Reinvestment Act
BCR	Benefit-cost ratio
BSRP	Basic System Repair Program
CEE	Consortium for Energy Efficiency
CIRI	Commercial and Industrial Retrofit Program
CRRI	Comprehensive Residential Heating Retrofit Program
CRP	Customer Responsibility Program
CSP	Conservation Service Provider
CWP	Conservation Works Program
CY	Calendar Year
DEP	Department of Environmental Protection
DSM	Demand-Side Management
ECA	Energy Coordinating Agency
ECRS	Efficiency Cost Recovery Surcharge
ELIRP	Enhanced Low Income Program
FY	Fiscal Year (PGW's fiscal year goes from September 1 to August 31)
GEEG	Green Energy Economics Group, Inc.
HECI	High Efficiency Construction Program
Keystone HELP	Keystone Home Energy Loan Program
NAECP	National Appliance Energy Conservation Act
NDR	Nominal Discount Rate
PA	Pennsylvania
PECIEP	Commercial and Industrial Equipment Rebates Program
RHER	Premium Efficiency Heating Equipment Program
PGW	Philadelphia Gas Works
PHDC	Philadelphia Housing Development Corp.
RDR	Real Discount Rate
TRC	Total Resource Cost
TRM	Technical Reference Manual
USC	Universal Services Charge
WAP	Weatherization Assistance Program



### ***C. Units***

Dth = 10 therms

MDth = 10,000 therms

MMDth = 10,000,000 therms

Ccf = 100 cubic feet

Mcf = 1,000 cubic feet

MMcf = 1,000,000 cubic feet

Bcf = 1,000,000,000 cubic feet

MMBtu = 1,000,000 Btu

BBtu = 1,000,000,000 Btu

kW = 1,000 watts

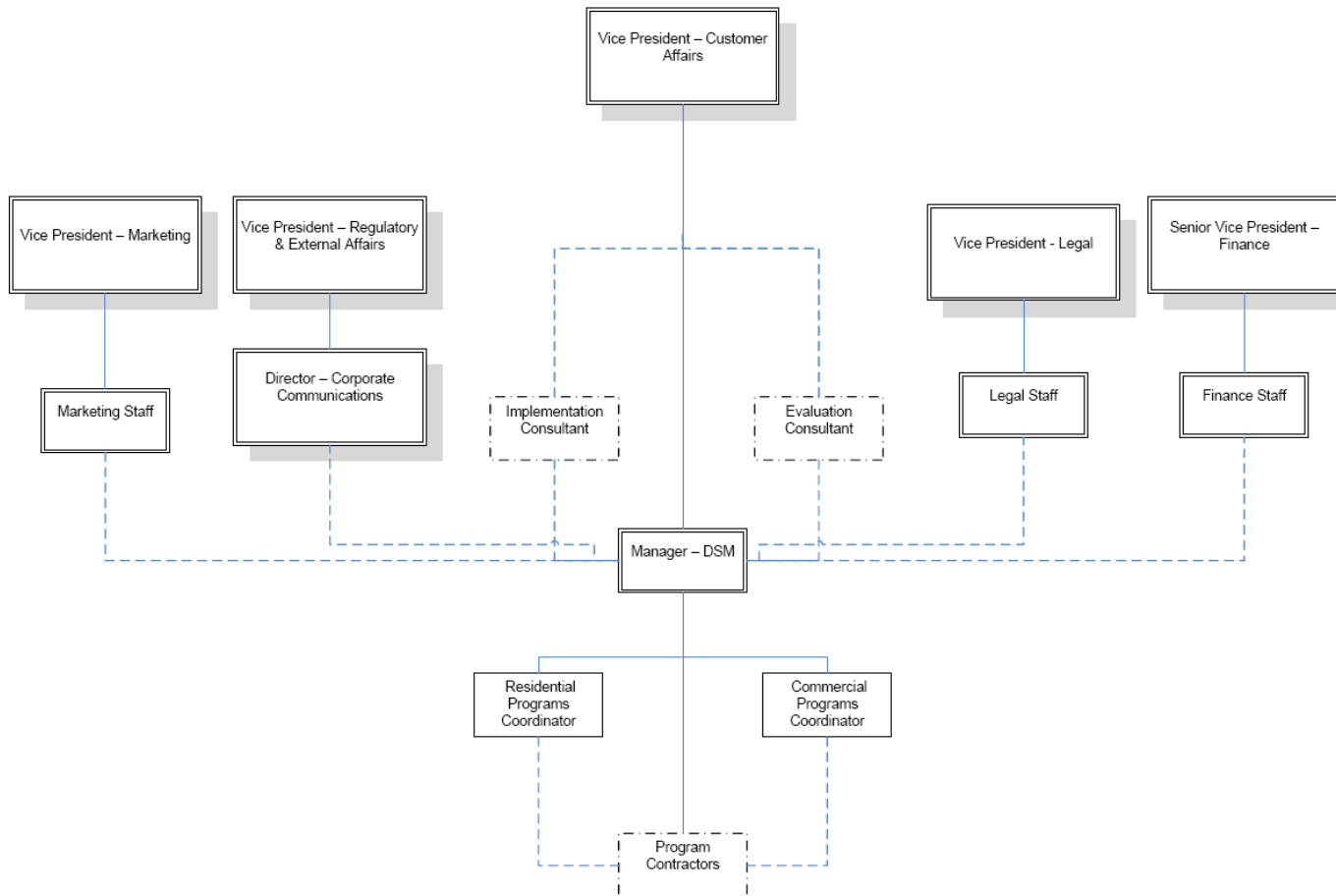
MW = 1,000,000 watts

GW = 1,000,000,000 watts

1 MMBtu = 1 Dth

1 therm = 1 ccf

## D. Organization Chart



## E. Five-Year Portfolio Projection Tables

### PHILADELPHIA GAS WORKS Five Year Gas Demand-Side Management Plan FISCAL YEAR BUDGETS (Nominal)

Nominal Dollars \$ 7,980,380 \$ 8,293,780 \$ 17,429,912 \$ 19,081,272 Caps per settlement

#### Portfolio

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives & Measure Installation Costs	\$ 5,253,378	\$ 5,865,504	\$ 8,593,506	\$ 13,572,041	\$ 15,255,267	\$ 48,539,696
Administration and Management	\$ 479,874	\$ 501,862	\$ 500,118	\$ 535,060	\$ 552,880	\$ 2,569,795
Marketing and Business	\$ 474,000	\$ 494,000	\$ 619,458	\$ 685,951	\$ 689,790	\$ 2,963,200
Contractor Costs	\$ 908,022	\$ 940,395	\$ 1,845,350	\$ 2,882,174	\$ 3,116,325	\$ 9,692,266
Inspection and Verification	\$ 71,700	\$ 71,418	\$ 228,586	\$ 404,161	\$ 462,581	\$ 1,238,445
Evaluation	\$ -	\$ -	\$ 81,182	\$ 82,806	\$ 253,387	\$ 417,375
<b>TOTAL:</b>	<b>\$ 7,186,974</b>	<b>\$ 7,873,179</b>	<b>\$ 11,868,201</b>	<b>\$ 18,162,193</b>	<b>\$ 20,330,230</b>	<b>\$ 65,420,777</b>

#### Enhanced Low Income Retrofit

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Measure Installation Costs	\$ 5,024,378	\$ 5,109,821	\$ 4,773,408	\$ 5,532,365	\$ 5,643,013	\$ 26,082,984
Administration and Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Marketing and Business	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contractor Costs	\$ 886,655	\$ 901,733	\$ 842,366	\$ 976,300	\$ 995,826	\$ 4,602,880
Inspection and Verification	\$ 70,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 65,000	\$ 330,000
Evaluation	\$ -	\$ -	\$ 81,182	\$ -	\$ 84,462	\$ 165,645
<b>TOTAL:</b>	<b>\$ 5,981,033</b>	<b>\$ 6,076,554</b>	<b>\$ 5,761,956</b>	<b>\$ 6,573,665</b>	<b>\$ 6,788,301</b>	<b>\$ 31,181,509</b>

#### Residential Heating Equipment Rebates

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ 229,000	\$ 678,370	\$ 1,626,650	\$ 3,386,510	\$ 4,171,310	\$ 10,091,840
Administration and Management	\$ 15,874	\$ 37,862	\$ 36,118	\$ 71,060	\$ 88,880	\$ 249,795
Marketing and Business Development	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 500,000
Contractor Costs	\$ 5,276	\$ 5,834	\$ 8,069	\$ 10,332	\$ 11,424	\$ 40,935
Inspection and Verification	\$ 1,700	\$ 3,255	\$ 8,600	\$ 12,734	\$ 16,896	\$ 43,184
Evaluation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL:</b>	<b>\$ 351,850</b>	<b>\$ 825,321</b>	<b>\$ 1,779,437</b>	<b>\$ 3,580,636</b>	<b>\$ 4,388,510</b>	<b>\$ 10,925,753</b>

#### Commercial and Industrial Retrofit Incentives

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ -	\$ 77,313	\$ 274,216	\$ 352,825	\$ 359,881	\$ 1,064,235
Administration and Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Marketing and Business	\$ 30,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 230,000
Contractor Costs	\$ 16,092	\$ 32,827	\$ 167,420	\$ 170,769	\$ 116,123	\$ 503,231
Inspection and Verification	\$ -	\$ 3,163	\$ 10,754	\$ 12,066	\$ 12,307	\$ 38,289
Evaluation	\$ -	\$ -	\$ -	\$ 82,806	\$ -	\$ 82,806
<b>TOTAL:</b>	<b>\$ 46,092</b>	<b>\$ 163,304</b>	<b>\$ 502,390</b>	<b>\$ 668,465</b>	<b>\$ 538,311</b>	<b>\$ 1,918,561</b>

#### Commercial and Industrial Equipment Rebates

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ -	\$ -	\$ 91,823	\$ 328,214	\$ 431,109	\$ 851,146
Administration and Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Marketing and Business	\$ -	\$ -	\$ 53,768	\$ 82,265	\$ 83,910	\$ 219,943
Contractor Costs	\$ -	\$ -	\$ 71,690	\$ 109,686	\$ 111,880	\$ 293,257
Inspection and Verification	\$ -	\$ -	\$ 3,092	\$ 11,051	\$ 14,515	\$ 28,658
Evaluation	\$ -	\$ -	\$ -	\$ -	\$ 84,462	\$ 84,462
<b>TOTAL:</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 220,373</b>	<b>\$ 531,217</b>	<b>\$ 725,876</b>	<b>\$ 1,477,466</b>

**PHILADELPHIA GAS WORKS**  
**Five Year Gas Demand-Side Management Plan**  
**FISCAL YEAR BUDGETS (Nominal)**

**High Efficiency Construction Incentives**

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ -	\$ -	\$ 300,798	\$ 764,345	\$ 933,093	\$ 1,998,237
Administration and Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Marketing and Business	\$ -	\$ -	\$ 35,845	\$ 54,843	\$ 55,940	\$ 146,629
Contractor Costs	\$ -	\$ -	\$ 61,295	\$ 155,755	\$ 190,142	\$ 407,192
Inspection and Verification	\$ -	\$ -	\$ 15,324	\$ 38,939	\$ 47,535	\$ 101,798
Evaluation	\$ -	\$ -	\$ -	\$ -	\$ 84,462	\$ 84,462
<b>TOTAL:</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 413,263</b>	<b>\$ 1,013,881</b>	<b>\$ 1,311,173</b>	<b>\$ 2,738,317</b>

**Comprehensive Residential Retrofit Incentives**

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ -	\$ -	\$ 1,526,611	\$ 3,207,782	\$ 3,716,861	\$ 8,451,254
Administration and Management	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Marketing and Business	\$ -	\$ -	\$ 35,845	\$ 54,843	\$ 55,940	\$ 146,629
Contractor Costs	\$ -	\$ -	\$ 694,509	\$ 1,459,332	\$ 1,690,930	\$ 3,844,771
Inspection and Verification	\$ -	\$ -	\$ 125,817	\$ 264,372	\$ 306,328	\$ 696,517
Evaluation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL:</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,382,782</b>	<b>\$ 4,986,329</b>	<b>\$ 5,770,060</b>	<b>\$ 13,139,171</b>

**Portfolio-wide Costs**

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2011 - FY 2015
Customer Incentives	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Administration and Management	\$ 464,000	\$ 464,000	\$ 464,000	\$ 464,000	\$ 464,000	\$ 2,320,000
Marketing and Business	\$ 344,000	\$ 344,000	\$ 344,000	\$ 344,000	\$ 344,000	\$ 1,720,000
Contractor Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Inspection and Verification	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-site Potential Evaluation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Evaluation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL:</b>	<b>\$ 808,000</b>	<b>\$ 808,000</b>	<b>\$ 808,000</b>	<b>\$ 808,000</b>	<b>\$ 808,000</b>	<b>\$ 4,040,000</b>

**PHILADELPHIA GAS WORKS**  
**Five Year Gas Demand-Side Management Plan**  
**COMPARISON OF FISCAL YEAR PORTFOLIO BUDGETS (2009 \$)**

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Total
Current Plan	\$ 6,913,368	\$ 7,468,521	\$ 11,036,706	\$ 16,558,672	\$ 18,170,885	\$ 60,148,151
FY 2011 Plan	\$ 7,960,026	\$ 7,972,846	\$ 11,282,848	\$ 15,940,858	\$ 17,128,274	\$ 60,284,852
Difference	\$ (1,046,658)	\$ (504,325)	\$ (246,142)	\$ 617,814	\$ 1,042,611	\$ (136,701)

## ***F. Projected Job Creation***

The following table presents the range of employment-impact projects for the proposed PGW programs, using a range of jobs created per trillion BTU saved. The job figures presented here do not include the additional jobs created from the electric savings resulting from PGW's programs. Please see PGW's Five Year Demand Side Management Plan for a discussion of the research that lead to the assumptions of jobs created per TBtu.

<b>JOB CREATION IMPACTS OF GAS EFFICIENCY PORTFOLIO</b>			
	<b>30 Jobs/TBtu</b>	<b>40 Jobs/TBtu</b>	<b>50 Jobs/TBtu</b>
<b>RESIDENTIAL PROGRAMS</b>			
FY 2011	46	61	76
FY 2012	59	79	99
FY 2013	121	162	202
FY 2014	219	293	366
FY 2015	252	336	420
<b>TOTAL</b>	<b>698</b>	<b>931</b>	<b>1164</b>
<b>NON-RESIDENTIAL PROGRAMS</b>			
FY 2011	0	0	0
FY 2012	3	4	5
FY 2013	11	15	19
FY 2014	18	24	31
FY 2015	20	27	34
<b>TOTAL</b>	<b>53</b>	<b>70</b>	<b>88</b>
<b>TOTAL PORTFOLIO</b>			
FY 2011	46	61	76
FY 2012	62	83	104
FY 2013	133	177	221
FY 2014	238	317	396
FY 2015	273	363	454
<b>TOTAL</b>	<b>751</b>	<b>1001</b>	<b>1251</b>



## ***H. Technical Reference Manual***

The FY 2011 version of the TRM has been included as a separate document.

## I. ELIRP Contractor Screenshots

Screenshot 1 shows the online Database screen where ELIRP contractors enter information from the house audit.

**Screenshot 1. Contractor Audit Information Entry Screen**

MENU Case Closing

DSM Energy Audit Property Information

INSERT Energy Audit Property Information

**Mandatory Fields.**  
Note: Assessment Date Must be the Last Field Filled In.

Case Id:

PECO Account#:

Sq. Ft. of Heated Space:

Open Fire Place?:

Type of A/C:

Source of Supplemental Heat:

Contribution of Supplemental Heat:

Healthy Home Referral Issues:

Healthy Home Program Comments:

Dwelling Type:

Number of Stories:

Number of Rooms in the Dwelling:

Year Dwelling was Constructed:

Unoccupied Dwelling Attached?:

Number of Air Conditioned Rooms:

Amount of Fuel for Supplement Heat:

Units of Supplemental Fuel:

Assessment Date:

Screenshots 2 and 3 show the online Database entry form that contractors use to enter the energy efficiency measures that they install in a house.



## Screenshot 2. Contractor Work Entry Form.

[Back](#)

Case ID:

Category:

Description:

--Select--

- Air Conditioner Cover
- Blower Door Test
- Chimney Pillow/Balloon
- Create Attic Hatch
- Exterior Door - Construct
- Exterior Door - Fix Lock
- Exterior Door - Repair
- Exterior Door - Replace
- Exterior Door - Replace Lock
- Exterior Door - Storm Door
- Exterior Door - Sweep
- Exterior Door - Weatherstrip
- Exterior Storm Window - Install
- Exterior Storm Window - Repairs
- Infiltration Work Including Blower Door Test
- Install Basement Under-porch Partition
- Interior Storm Window - install
- Prime Window - Reglaze Only
- Prime Window - Repair/Replace Sash
- Prime Window - Replace Cracked Glass w/ Glaze
- Prime Window - Replacement window
- Switch & Outlet Gasket

## Screenshot 3. Contractor Work Entry Form.

[Back](#)

Case ID:

Category:

Description:

--Select--

- Attic - Add Roof Vent
- Attic - Add Soffit Vent
- Attic - Attic Access (Folding Stairs)
- Attic - Attic Access (No Stairs)
- Attic - Blown Insulation
- Attic - Blown Insulation R - 10
- Attic - Blown Insulation R - 20
- Attic - Blown Insulation R - 25
- Attic - Blown Insulation R - 27
- Attic - Blown Insulation R - 30
- Attic - Blown Insulation R - 38
- Attic - Blown Insulation R19
- Attic - Hatch Boxing
- Attic - Recessed Lighting Boxing
- Attic - Soffit Chutes
- Attic - Unfaced Batt Fiberglass Insulation R-19
- Floor - Faced Batt Fiberglass Insulation R- 11 16"
- Floor - Faced Batt Fiberglass Insulation R- 19 24"
- Floor - Faced Batt Fiberglass Insulation R-19 16"
- Floor Over Unconditioned Area - Faced Batt Fiberglass
- Floor Over Unconditioned Area -Install Vapor Barrier
- Garage - Faced Batt Fiberglass Insulation R-19
- Garage - Thermax Board
- Interior Foundation - Faced Batt Fiberglass Insulation
- Interior Foundation - Insulate Knee Wall
- Prime Window - Install Window Film
- Prime Window - Window Quilt
- Sill Box - Faced Batt Fiberglass Insulation R-11 16"
- Wall Insulation

one