

**Central Hudson Gas & Electric Corp.
90-Day Filing Evaluation Plans**

1. Residential Lower Income Assistance Program – Evaluation Plan.....	2
2. Residential Appliance Recycling Program – Evaluation Plan.....	7
3. Expanded Residential HVAC Program – Evaluation Plan	12
4. Residential Lighting – Community Group CFL Sales Program – Evaluation Plan	19
5. Mid-Size Commercial Business Program – Evaluation Plan.....	24

1. Residential Lower Income Assistance Program – Evaluation Plan

Program Description

- **Program Objective:** The primary objective of this program is to assist lower-income residential energy consumers to utilize a whole-house approach to reduce energy consumption. In this program, the homeowner or building owner would be provided with an assessment of how a combination of improvements, including weatherization, improving HVAC and upgrading lighting and appliances would result in a more comfortable home, with decreased energy consumption. These energy conservation measures would be covered up to \$3,000 for homeowners and up to \$6,000 for 2-4 building owners. An income qualified owner that occupies a unit in a 2-4 unit building can receive a subsidy of up to \$3,000 without any income verification required for the tenants. A higher subsidy, up to the total of \$6,000 per building, may be available if one or more tenants also are income eligible. In addition, this program would serve to develop a trained and certified group of contractors capable of providing whole house energy services in the Central Hudson territory. Contractors would be offered training opportunities and encouraged to become quality certified by organizations such as the Building Performance Institute and National Association for Technical Excellence (NATE).
- **Program Theory:** Low-income households require greater incentives than other households because they have little discretionary income to allocate to energy efficiency upgrades. A second significant issue is that a high percentage of these customers live in rental properties, and the also landlords require a large incentive because they may receive no benefit from the upgrade, and their ability to increase rental payments is typically tightly constrained.
- **Program Administration and Delivery:** The program will be administered by Central Hudson working with a selected implementation contractor selected through a competitive RFP process. With Company oversight, the vendor will be responsible for recruiting and training contractors, processing incentives, and spot audit verification. The Company will work with the vendor to develop a detailed implementation plan, measure lists, and deemed savings levels. The contractor will operate a call center, maintain program records in a computerized tracking system, perform rebate fulfillment, and produce weekly status reports.
- **Quality Assurance (QA) Inspections:** QA inspections will be performed of 25% of equipment installations in year 1 and 15% in years 2 and 3.
- **Eligible Measures:** Eligible measures for this program will include insulation upgrades, air sealing, duct sealing, heating system improvement and repairs (excluding asbestos abatement and electrical work), DHW improvement, ENERGY STAR[®] appliance and lighting upgrades.
- **Per-Unit Measure Savings:** Energy and demand savings will be calculated for each measure installed, using standardized protocols and published efficiency, efficacy, and energy-use parameters. These protocols and commonly used data parameters will be documented in the Program's Technical Reference Manual, which will be reviewed and

approved by the Evaluation Contractor prior to program launch. For planning purposes, the following set of average per-home gross savings will be used.

Average Per-Home Annual Gross Energy and Peak Demand Savings

Dwelling Type	Summer kW	Annual (kWh)	Therms/yr
Single Family	0.27	2,200	338
Building Owner (2-4 family)	0.30	4,100	435

- **Targeted Participation Levels and Savings:** The following table presents targeted participation (dwellings treated) and net savings during each year of the program. (A net-to-gross ratio of 10% was assumed, pending completion of the Impact Evaluation.)

Annual Net Electric Energy and Peak Demand Savings

Year	Owner-Occupied Dwellings	Rental Dwellings	Summer kW	Annual MWh	Annual Therms
2009	100	50	42	425	55,500
2010	200	75	77	748	100,225
2011	300	100	111	1,070	144,900
Total	600	225	230	2,243	300,675

- **Program Schedule:** Central Hudson plans to begin offering this program to customers on January 1, 2009, subject to Commission approval.
- **Program Tracking Database (PTD):** The PTD will contain program verified data compiled from Agreement forms, Energy Audits, QA inspections, and bank statements verifying incentive and trade ally payment checks were deposited. The PTD supports program evaluation through the collection of all relevant data pertaining to (1) customer and trade ally participants, (2) building owner and property manager (if applicable), and (3) measures recommended and installed. Examples of project- and measure-specific data that will be compiled in the PTD include:
 - Dates when meetings with customers occurred
 - Date when Program Participation Agreement was signed
 - Equipment to be installed (Type, make, model number, serial number, capacity rating, efficiency rating)
 - Equipment to be replaced (Type, make, model number, serial number, capacity rating, efficiency rating)
 - Date when of installation completed
 - Installation location
 - Characteristics of business (type, number of employees)
 - Characteristics of host facility (type of building, heated floorspace, cooled floorspace, major electricity and fuel end-uses, and estimated annual usages)
 - Project work order number
 - QA inspection date(s)
 - Annualized energy savings (both by measure and total for project)

- Measure life (for each measure)
- Measure installed cost (both by measure and total for project)
- Incentive payment amount (both by measure and total for project)
- Date incentive and payment checks mailed
- Date each check returned to bank

Evaluation Approach – Overview

In December 2008 Central Hudson will select and contract with an individual or firm that has extensive prior experience in performing process and impact evaluations. A *Process Evaluation* will be performed during Year One and immediately after Year Three, with an objective of identifying enhancements that can be made to implementation efforts that may contribute to improved results. *Impact Evaluations* will be performed during Year Two and after Year Three.

Consistent with the Working Group III recommendation in the EEPS proceeding, Central Hudson has budgeted approximately 5% of the program budget to fund evaluation efforts.

Central Hudson anticipates that its evaluation efforts will be informed by the ongoing efforts of the newly formulated Evaluation Advisory Group and by collaboration with the other utilities in the State that are planning to implement a similar program. The Company may participate in jointly sponsored evaluation studies with the other utilities.

Process Evaluation – Detailed Activities

The initial Process Evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying in an initial report improvements that can be made to program implementation efforts. A final report summarizing results from the Process Evaluation, which will include survey interviews with participating and nonparticipating customers and trade allies, will be submitted before year-end 2009.

The second Process Evaluation will be scheduled for the January to April period of 2012.

The Process Evaluation reports will document changes to program processes during start-up annually thereafter, and the following information:

- Accuracy and completeness of program records (tracking database) to ensure that (1) reported accomplishments are accurate, and (2) data required to support Impact Evaluation efforts is being collected.
- Level of customer satisfaction at different points during the three-year program term.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors, program customers, trade allies and other key stakeholders. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion activities.
- Effectiveness in overcoming barriers to participation on the part of both customers and trade allies.
- Remaining barriers to program participation, including an assessment of why some customers and trade allies choose to not participate in the program.
- Reasons for participation; extent to which efficient equipment would have been installed without the program.¹

¹ The second part pertains to net-to-gross ratio.

- Other energy efficiency purchases (e.g., those related to reducing electricity usage), and when these were made.
- Identification of lessons learned and specific actionable recommendations for program improvement.

Impact Evaluation – Detailed Activities

The Impact Evaluations will quantify the gross and net gas savings attributable to program efforts based on (a) how the measures installed through this program actually perform, and (b) customer motivation to participate i.e., extent to which customer is a “free-rider). Results will be obtained for each measure category (i.e., each tier of each measure type). The first Impact evaluation will be performed during the summer of 2010, and will analyze data pertaining to measures installed during 2009. The second Impact evaluation will be performed during the summer of 2012, and will analyze data pertaining to measures installed during 2010 and 2011.

At this point in time, without counsel from the Evaluation Advisory Group, Central Hudson proposes the following Impact Evaluation plan.

- **Impact Evaluation Methodology:** A regression analysis of billed electricity and gas-usage will be performed that includes both participating dwellings and a control group of similar homes that did not install measures. Billed energy usage for at least a year prior to measure installation will be analyzed. Other explanatory variables (presence of other energy-using equipment, heating degree-days, dwelling type and size, and number of occupants) will be included in the analysis. This analysis will require a combination of on-site and telephone surveys to obtain accurate dwelling-specific data.
- **Sampling Strategies and Design and Data Reliability Standards:** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III, Central Hudson’s goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Company will develop sampling protocols for all of its evaluations based on this standard.
- **Steps to Identify and Mitigate Threats to Data Reliability:** The Company will review the detailed evaluation methodology submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain a 90% confidence interval within +/- 10 % precision and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to ensure data reliability to the greatest practical extent, including methods for minimizing systematic and random error and techniques for reducing uncertainty introduced by necessary assumptions and adjustments to the data.

Reporting

Central Hudson plans to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, the Company proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 90 days following the end of the calendar year.

The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year to date
- Program Marketing Expenditures, year to date
- Customer Incentive Expenditures, year to date
- Program Implementation Expenditures, year to date
- Evaluation & Market Research Experience, year to date
- Total Expenditures, year to date
- Program Year Budget, year to date
- Annual Budget
- Number of Rebates (or Participants), year to date
- Participation Goal, year to date
- Annual Participant Goal for Program Year
- Total Savings (kWh, kW, therms), year to date
- Savings Goal, year to date
- Annual Savings Goals for Program Year

2. Residential Appliance Recycling Program – Evaluation Plan

Program Description

- **Program Objective:** The primary objective of this program is to capture significant energy savings and environmental benefits by removing recycling old refrigerators, freezers, and room AC units from homes. Refrigerants will be removed from the appliances collected, which are then sent to metal recyclers.

The customer giving up a refrigerator or freezer would receive a per unit “bounty” for one or two working refrigerators/freezers. The customer giving up a room AC unit would receive a per unit “bounty” for one or two working units.

This Appliance Recycling Program (ARP) will use a program design and incentive levels similar to utility ARP’s in northern California (e.g., PG&E, SMUD, Lodi Electric, Silicon Valley Power, and the City of Palo Alto).

- **Program Theory:** The ARP’s core theory is that many customers retain and operate spare appliances even though such units are old, inefficient, and/or ineffectively operated (e.g., a secondary refrigerator is frequently mostly empty, or used simply to keep beverages cold). These circumstances occur because the customer 1) does not recognize the full cost of operating the units in this way and/or 2) perceives a hassle factor regarding the disposal of the unit. The ARP overcomes this inertia by 1) publicizing the true costs of running the old, inefficient units, 2) making unit disposal extremely convenient and hassle-free, and 3) offering a financial incentive to the customer.
- **Program Administration and Delivery:** The program will be administered by Central Hudson. The Company will contract with an experienced appliance recycling program-delivery contractor, who will be responsible for verifying the appliances are working, transporting them from customer homes, removing refrigerants, delivering the dry units to a metals recycler, issuing incentive checks, and maintaining program records in a computerized tracking system.

Central Hudson will publicize the program. Residential customers will be able to call a toll-free number and/or use the Internet to schedule pick-ups.

The contractor will track units from the time a customer contacts the program, through customer-site collection, and all the way through the recycling process. Tracking includes (but is not limited to) customer verification and full documentation of number, size and type of units recycled, and the total volume of materials recycled.

- **Quality Assurance (QA) Inspections:** Central Hudson will conduct a telephone survey of a sample of participants to verify that the contractor’s operations and customer-interactions were fully satisfactory. All complaints heard will be reviewed with the contractor, with the request that employees involved be immediately retrained.
- **Eligible Program Measures:** Working refrigerators, freezers, and 6,000 Btu/hr or larger AC units, up to two of each per residence.
- **Targeted Participation Levels:** The following table presents targeted participation (units removed) during each year of the program.

Appliance Type	Year	Sales
Refrigerator (Collected)	2008	80
	2009	3,000
	2010	3,000
	2011	<u>3,000</u>
	Total	9,080
Freezer (Collected)	2008	20
	2009	750
	2010	750
	2011	<u>750</u>
	Total	2,270
Room AC Units (Collected)	2008	20
	2009	750
	2010	750
	2011	<u>750</u>
	Total	2,270

- Anticipated Savings:** The first table below presents estimated per-unit Net Savings for each type of appliance. The values in the table are based on detailed programs (see footnotes 1 and 2). These “Deemed Savings” values will be used until results from the first impact evaluation are available.

Deemed Values of Per-Unit Annual Net Electrical Energy and Peak Demand Savings

Appliance Type	kWh/yr	Summer kW
Refrigerator (Collected – Typical Age) ²	681	0.080
Freezer (Collected - Typical Age) ³	897	0.100
Room AC Units (Collected)	180	0.225

Using the information in the two preceding tables and the assumption stated above, the net savings are as shown in the following table.

² Based on KEMA -Xenergy, "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", 2/2004; value assumes 1946 gross kWh and 35% NTG (NTG corrects for full and partial free-ridership, and partial year use); value is conservative relative that reported for 2004-2005 program in ADM final report published in December 2007.

³ Based on KEMA -Xenergy, "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", 2/2004; value assumes 1662 gross kWh and 54% NTG (NTG corrects for full and partial free-ridership, and partial year use); value is similar to that reported for 2004-2005 program in ADM final report published in December 2007.

Annual Net Electrical Energy and Peak Demand Savings

Equipment Type	Year	MWh/yr	Summer kW
Refrigerator (Collected – Typical Age)	2008	54	6
	2009	2,043	240
	2010	2,043	240
	2011	<u>2,043</u>	<u>240</u>
	Total	6,183	726
Freezer (Collected - Typical Age)	2008	18	2
	2009	673	75
	2010	673	75
	2011	<u>673</u>	<u>75</u>
	Total	2,036	227
Room AC Units (Collected)	2008	2	4
	2009	88	143
	2010	88	143
	2011	<u>88</u>	<u>143</u>
	Total	267	431
Program Totals	2008	75	12
	2009	2,804	458
	2010	2,804	458
	2011	<u>2,804</u>	<u>458</u>
	Total	8,487	1,386

- **Program Schedule:** Central Hudson plans to begin offering this program during the last quarter of 2008 or first quarter of 2009, subject to Commission approval.
- **Program Tracking Database (PTD):** The PTD will contain customer and appliance data compiled from records submitted by the contractors. Examples of measure-specific data that will be compiled for each participant include:
 - All dates of customer contact (initial through pick-up)
 - Equipment type, size, model number removed from residence.
 - Date when refrigerants removed unit
 - Date when units delivered to metals recycler; weight of dry unit.

Evaluation Approach – Overview

In December 2008 Central Hudson will select and contract with an individual or firm that has extensive prior experience in performing process and impact evaluations. A *Process Evaluation* will be performed during Year One and immediately after Year Three, with an objective of identifying enhancements that can be made to implementation efforts that may contribute to improved results. *Impact Evaluations* will be performed during Year Two and after Year Three.

Process Evaluation – Detailed Activities

The initial Process Evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying in an initial report improvements that can be made to program implementation efforts. A final report summarizing results from the Process Evaluation, which will include survey interviews with participating and nonparticipating customers and trade allies, will be submitted before year-end 2009.

The second Process Evaluation will be scheduled for the January to April period of 2012.

The Process Evaluation reports will document changes to program processes during start-up annually thereafter, and the following information:

- Accuracy and completeness of program records (tracking database) to ensure that (1) reported accomplishments are accurate, and (2) data required to support Impact Evaluation efforts is being collected.
- Level of customer satisfaction at different points during the three-year program term.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors (i.e., the community groups) participating customers. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion activities.
- Effectiveness in overcoming barriers to participation.
- Remaining barriers to program participation, including an assessment of why some customers choose to not participate in the program.
- Identification of lessons learned and specific actionable recommendations for program improvement.

Impact Evaluation – Detailed Activities

The Impact Evaluations will quantify the gross and net electricity savings attributable to program efforts based on (a) an analysis of data in the PTD, and (b) customer surveys to determine the extent to which customer is a “free-rider. The first Impact evaluation will be performed during the spring of 2010, and will analyze data pertaining to measures installed during 2009. The second Impact evaluation will be performed during the spring of 2012, and will analyze data pertaining to measures installed during 2010 and 2011.

- **Sampling Strategies and Design and Data Reliability Standards:** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III, Central Hudson’s goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Company will develop sampling protocols for all of its evaluations based on this standard.
- **Steps to Identify and Mitigate Threats to Data Reliability:** The Company will review the detailed evaluation methodology submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain a 90% confidence interval within +/- 10 % precision and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to ensure data reliability to the greatest practical extent, including methods for minimizing

systematic and random error and techniques for reducing uncertainty introduced by necessary assumptions and adjustments to the data.

Reporting

Central Hudson plans to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, the Company proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 90 days following the end of the calendar year.

The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year to date
- Program Marketing Expenditures, year to date
- Customer Incentive Expenditures, year to date
- Program Implementation Expenditures, year to date
- Evaluation & Market Research Experience, year to date
- Total Expenditures, year to date
- Program Year Budget, year to date
- Annual Budget
- Number of customer Participants and units of each type recycled, year to date
- Participation Goal, year to date
- Total Savings (kWh, kW), year to date
- Savings Goal, year to date
- Annual Savings Goals for Program Year
- Weight of units recycled, year to date.

3. Expanded Residential HVAC Program – Evaluation Plan

*** The Expanded Residential HVAC program is an expansion of the Residential ENERGY STAR® HVAC Program and evaluation of the two programs will be done in conjunction to lower evaluation costs.**

Program Description

- **Program Objectives:** The objective of this program is to increase the penetration of ENERGY STAR® central air conditioners and even more energy efficient HVAC solutions, such as central air-source and ground-source heat pumps, and electric heat pump water heaters, in the Central Hudson service territory. This will be accomplished by providing proper training, education and incentives to contractors for quality installations of such energy efficient equipment. “Quality installations” include having the installing contractors determine that the equipment being installed is properly sized. The program will also educate the customer and provide incentives to customers to help pay for incremental costs to install HVAC solutions that meet or exceed efficiency and quality installation standards. In addition, incentives will be made available to customers when installing programmable thermostats in this program. Incentives will be provided for the turn-in of room AC units, also.
- **Program Theory:** Research performed over the past two decades by Central Hudson and other utilities has identified the most significant barriers to greater penetration of high-efficiency space- and water-heating equipment to be:
 - Higher first-cost, relative to lowest-cost/lower efficiency units
 - Lack of promotion by installing contractors, who typically recommend units that are easiest to sell and install. In many instances, this is because the installing contractors have little familiarity with high-efficiency equipment.

Research has also shown that installing contractors seldom take the time to investigate equipment sizing, to determine whether the unit being replaced may be oversized, either through poor sizing initially or because the thermal envelope of the home has been improved; or undersized, again because of an initial sizing error or because of an addition to the home.

Central Hudson’s program design addresses both barriers as well as requiring the installing contractor to determine whether the capacity of the HVAC unit being installed should be different than the capacity of the unit being replaced. Because additional water-heating savings can be achieved by reducing hot-water usage, the installing contractor will also offer to install low-flow showerheads and faucets to customers who install a more efficient water heater, air-conditioner, or heat pump. The contractor will also inform the customer that Central Hudson will provide an additional financial incentive if the customer purchases an ENERGY STAR rated washing machine. Installing contractors will be paid a small incentive to encourage them to become a Trade Ally Partner and to provide the additional services.

- **Program Administration and Delivery:** The program will be administered by Central Hudson working with a selected implementation vendor who will be responsible for marketing the program to heating contractors, dealers, and plumbers in the Company’s

service territory, operating a call center, quality assurance inspections, maintaining program records in a computerized tracking system, rebate fulfillment, and producing routine status reports.

- **Quality Assurance (QA) Inspections:** QA inspections performed of the first four installations made by each HVAC contractor or plumber, and roughly every tenth installation thereafter randomly. If any problems are observed, additional inspections will be performed.
- **Eligible Program Measures:** The following table presents estimated per-unit savings for each HVAC equipment type and efficiency tier or option, relative to a representative assumed baseline unit. These are the “deemed savings” values that will be used until an Impact Evaluation is performed.

Equipment Type / Baseline	Minimum Performance	kWh/yr	kW
Central Air Conditioner / <i>Baseline: SEER = 11</i>	SEER = 14 / EER = 12.0	419	1.0
	SEER = 15 / EER = 13.0	522	1.2
	Weighted Average Value (3.5-ton unit)	440	1.0
Air-Source Heat Pump / <i>Baseline: SEER = 11 ASHP</i>	SEER=14 / EER=12.0 / HSPF=8.5	1,613	1.2
	SEER=15 / EER=13.0 / HSPF=9.0	2,025	1.3
	Weighted Average Value (3.5-ton unit)	1,736	1.0
Ground-Source Heat Pump / <i>Baseline: SEER = 11 ASHP</i>	EER = 15 / COP = 3.1	3,791	1.2
	EER = 16 / COP = 3.5	4,595	1.5
	Weighted Average Value (4.5-ton unit)	4,112	1.4
Heat Pump Water Heater / <i>Baseline: EF = 0.9</i>	EF = 2.0	2,320	0.5
Room-Size AC Unit	ENERGY STAR®	124	0.2
Programmable Thermostat	ENERGY STAR®	See Note 1	0.0

Note 1: It is assumed that a programmable thermostat is installed with every CAC, ASHP and GSHP system. The savings shown in the table include a 2.5% addition to account for the savings produced by the programmable thermostat. Purchases of thermostats by customers are assumed to result in a savings of 42 therms/year of natural gas.

- **Targeted Participation Levels:** The following table presents targeted participation (units installed) during each year of the program.

Equipment Type	Distribution By Tier	Year	Installations
Central Air Conditioner	Tier 1: 80% Tier 2: 20%	2009	180
		2010	380
		2011	<u>600</u>
		Total	1,160
Air-Source Heat Pump	Tier 1: 70% Tier 2: 30%	2009	100
		2010	170
		2011	<u>320</u>
		Total	590
Ground-Source Heat Pump	Tier 1: 60% Tier 2: 40%	2009	15
		2010	40
		2011	<u>75</u>
		Total	130
Heat Pump Water Heater	N/A	2009	15
		2010	50
		2011	<u>200</u>
		Total	265
Window AC Unit	N/A	2009	900
		2010	2,000
		2011	<u>3,000</u>
		Total	5,900
Through Wall AC Unit	N/A	2009	120
		2010	380
		2011	<u>500</u>
		Total	1,000
Programmable Thermostat	N/A	2009	600
		2010	1,200
		2011	<u>2,000</u>
		Total	3,800

Because the date when authorization to offer the program will be received is uncertain, we have not anticipated any actual installations during 2008. However, if expedited authorization were received, installations in 2008 would produce associated energy savings.

- **Anticipated Savings:** Using the information in the two preceding tables and an assumed net-to-gross ratio of 95%, the net savings (annualized kWh/yr) are shown in the following table.

Annual Net Electric Energy and Peak Demand Savings

Equipment Type	Year	MWh/yr	Summer kW	3-Year Totals
Central Air Conditioner	2009	75	171	MWh/yr: 485 kW: 1,102
	2010	159	361	
	2011	251	570	
Central Air-Source Heat Pump	2009	165	95	MWh/yr: 973 kW: 561
	2010	280	162	
	2011	528	304	
Ground-Source Heat Pump	2009	59	20	MWh/yr: 508 kW: 173
	2010	156	53	
	2011	293	100	
Heat Pump Water Heater	2009	33	1	MWh/yr: 584 kW: 25
	2010	110	5	
	2011	441	19	
Room-Size AC Unit	2009	106	171	MWh/yr: 695 kW: 1,121
	2010	236	380	
	2011	353	570	
Totals:	2009	438	458	MWh/yr: 3,245 kW: 2,982
	2010	941	961	
	2011	1,866	1,563	

Annual Net Natural Gas Energy Savings

Equipment Type	Year	Therms/yr	3-Year Total
Programmable Thermostat	2009	23,940	151,620
	2010	47,880	
	2011	79,800	

- **Program Schedule:** Central Hudson plans to begin offering this program to customers upon Commission approval.
- **Program Tracking Database (PTD):** The PTD will contain program verified data compiled from application forms and QA inspections, and bank statements verifying incentive checks were deposited. The PTD supports program evaluation through the collection of all relevant data pertaining to customer and trade ally participants and measures installed. Examples of measure-specific data that will be collected include:
 - Date when Program Application was received
 - Equipment to be installed (Type, make, model number, serial number, capacity rating, efficiency rating)
 - Equipment to be replaced (Type, make, model number, serial number, capacity rating, efficiency rating)

- Date when installation was completed
- Installation location
- Characteristics of home (dwelling type, heated floorspace, number of occupants)
- Project or work order number
- QA inspection date (if applicable)
- Annualized energy savings
- Measure life
- Total measure installed cost
- Incremental measure cost
- Incentive payment amount
- Date incentive check mailed
- Date incentive check returned to bank

Evaluation Approach – Overview

In December 2008 Central Hudson will select and contract with an individual or firm that has extensive prior experience in performing process and impact evaluations. A *Process Evaluation* will be performed during Year One and immediately after Year Three, with an objective of identifying enhancements that can be made to implementation efforts that may contribute to improved results. *Impact Evaluations* will be performed during Year Two and after Year Three.

Consistent with the Working Group III recommendation in the EEPS proceeding, Central Hudson has budgeted approximately 5% of the program budget to fund evaluation efforts.

Central Hudson anticipates that its evaluation efforts will be informed by the ongoing efforts of the newly formulated Evaluation Advisory Group and by collaboration with the other utilities in the State that are planning to implement a similar program. The Company may participate in jointly sponsored evaluation studies with the other utilities.

Process Evaluation – Detailed Activities

The initial Process Evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying improvements that can be made to program implementation efforts in an initial report. A final report summarizing results from the Process Evaluation, which will include survey interviews with participating and nonparticipating customers and trade allies, will be submitted before year-end 2009.

The second Process Evaluation will be scheduled for the January to April period of 2012.

The Process Evaluation reports will document changes to program processes during start-up annually thereafter, and the following information:

- Accuracy and completeness of program records (tracking database) to ensure that (1) reported accomplishments are accurate, and (2) data required to support Impact Evaluation efforts is being collected.
- Level of customer satisfaction at different points during the three-year program term.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors, program customers, trade allies and other key stakeholders. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion activities.

- Effectiveness in overcoming barriers to participation on the part of both customers and trade allies.
- Remaining barriers to program participation, including an assessment of why some customers and trade allies choose to not participate in the program.
- Reasons for participation; extent to which efficient equipment would have been installed without the program.⁴
- Other energy efficiency purchases (e.g., those related to reducing electricity usage), and when these were made.
- Identification of lessons learned and specific actionable recommendations for program improvement.

Impact Evaluation – Detailed Activities

The Impact Evaluations will quantify the gross and net gas savings attributable to program efforts based on (a) how the measures installed through this program actually perform, and (b) customer motivation to participate i.e., extent to which customer is a “free-rider”). Results will be obtained for each measure category (i.e., each tier of each measure type). The first Impact evaluation will be performed during the summer of 2010, and will analyze data pertaining to measures installed during 2009. The second Impact evaluation will be performed during the summer of 2012, and will analyze data pertaining to measures installed during 2010 and 2011.

At this point in time, without counsel from the Evaluation Advisory Group, Central Hudson proposes the following Impact Evaluation plan.

- **Impact Evaluation Methodology:** A regression analysis of billed gas-usage will be performed that includes both participants and a control group of similar homes with natural gas heat that did not install measures. Billed gas usage for at least a year prior to measure installation will be analyzed. Other explanatory variables (presence of other gas-using equipment, heating degree-days, dwelling type and size, and number of occupants) will be included in the analysis. This analysis will require a combination of on-site and telephone surveys to obtain accurate dwelling-specific data.
- **Net-to-Gross (NTG) Factor:** Prior to any additional analysis being conducted, the Companies will use a 5% reduction for free-ridership net of spillover. The Impact Evaluations will produce Program-specific NTG assessments based on data collected via participant surveys.
- **Sampling Strategies and Design and Data Reliability Standards:** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III, Central Hudson’s goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Company will develop sampling protocols for all of its evaluations based on this standard.
- **Steps to Identify and Mitigate Threats to Data Reliability:** The Company will review the detailed evaluation methodology submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain

⁴ The second part pertains to net-to-gross analysis.

a 90% confidence interval within +/- 10 % precision and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to ensure data reliability to the greatest practical extent, including methods for minimizing systematic and random error and techniques for reducing uncertainty introduced by necessary assumptions and adjustments to the data.

Reporting

Central Hudson plans to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, the Company proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 90 days following the end of the calendar year.

The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year to date
- Program Marketing Expenditures, year to date
- Customer Incentive Expenditures, year to date
- Program Implementation Expenditures, year to date
- Evaluation & Market Research Experience, year to date
- Total Expenditures, year to date
- Program Year Budget, year to date
- Annual Budget
- Number of Rebates (or Participants), year to date
- Participation Goal, year to date
- Annual Participant Goal for Program Year
- Total Savings (kWh, kW, therms), year to date
- Savings Goal, year to date
- Annual Savings Goals for Program Year

4. Residential Lighting – Community Group CFL Sales Program – Evaluation Plan

Program Description

- **Program Objective:** The primary objective of this program is to promote the use of ENERGY STAR CFLs and other appliances with an ENERGY STAR rating. A second objective is to verify the viability of using community groups as a program delivery agent.

- **Program Theory:** Customers will pay the full retail cost when the energy efficiency message is conveyed in a meaningful way and to help community groups.

This program provides a new approach to encourage customers to install energy efficient CFLs. The fund raiser model is designed to create a delivery mechanism that leverages community groups to explain the complex value proposition for CFLs in a direct (i.e., face-to face) sales environment to support CFL sales as a premium-quality product sold at its full retail price.

- **Program Administration and Delivery:** The program will be administered by Central Hudson. Participating community groups will recruit participants, create program records (which the Company will transcribe into in a computerized tracking system) and deliver the CFLs ordered by customers to the purchasers. The community groups fundraise by selling the CFLs at or near the normal sales price, earning about \$4.00 for each one sold. Central Hudson purchases the lamps in quantity and makes them available to the community group at no charge.

This program will achieve kWh and kW savings, but it also will serve as part of the community outreach and education program. Brochures for other Central Hudson energy efficiency programs will be attached to CFL packages purchased during the program to promote the HVAC, Efficient Gas Equipment, Refrigerator Recycling, and other programs.

- **Quality Assurance (QA) Inspections:** Central Hudson will conduct a telephone survey of a sample of participants obtained by each community group to verify that the participant received instructions concerning selecting the optimum location for installing the lamps, and that the lamps were actually installed. In addition, central Hudson will also conduct a limited number of on-site inspections.
- **Eligible Program Measures:** 14-W, 19-W, and 23-W ENERGY STAR rated CFLs.
- **Targeted Participation Levels:** The following table presents targeted participation (units installed) during each year of the program.

Year	Lamps Installed
2009	6,000
2010	14,000
2011	10,000
Total:	30,000

Anticipated Savings: The first table below presents estimated per-unit gross savings for each eligible type of CFL, relative to a representative assumed Baseline incandescent unit. The values in the table are based on a recent detailed evaluation of the *Efficiency Maine* Residential Lighting Program. These “Deemed Savings” values will be used until results from the first impact evaluation are available.

Deemed Values of Per-Unit Annual Gross Electrical Energy and Peak Demand Savings

Equipment Type / Baseline	kWh/yr	Summer kW
Screw-In ENERGY STAR® CFL <i>Baseline: Incandescent Lamp</i>	50.5	0.001

Installation Fraction: It has been assumed that 90 percent of the CFLs ordered are installed (placed in use) within a month of the date they are received.

Measure Life and Persistence: It has been assumed that the operating life of each CFL is 7 years, and that annual persistence over this period is 99.5 percent (i.e., 0.5% of the lamps are removed each year because the household relocates outside of New York State, the lamp fails and is not replaced in-kind, etc.).

Net-to-Gross Factor. It has been assumed that the NTGF = 82%

Using the information in the two preceding tables and the assumption stated above, the net savings are as shown in the following table.

Annual Net Electrical Energy and Peak Demand Savings

Year	MWh/yr	Summer kW
2009	248	5
2010	580	12
<u>2011</u>	<u>414</u>	<u>8</u>
Total	1,242	25

- **Program Schedule:** Central Hudson plans to begin offering this program during the first quarter of 2009, subject to Commission approval.
- **Program Tracking Database (PTD):** The PTD will contain customer and CFL data compiled from copies of CFL Order Forms submitted by participating community groups. The PTD supports program evaluation through the collection of all relevant data pertaining to customer participants and CFLs purchased. Examples of measure-specific data that will be compiled for each participant include:
 - Date when CFL order was placed
 - CFL wattage rating
 - Date when CFLs were delivered to the community agency
 - Date when CFLs were delivered to customer by the community agency

Evaluation Approach – Overview

In December 2008 Central Hudson will select and contract with an individual or firm that has extensive prior experience in performing process and impact evaluations. A *Process Evaluation* will be performed during Year One and immediately after Year Three, with an objective of identifying enhancements that can be made to implementation efforts that may contribute to improved results. *Impact Evaluations* will be performed during Year Two and after Year Three.

Process Evaluation – Detailed Activities

The initial Process Evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying in an initial report improvements that can be made to program implementation efforts. A final report summarizing results from the Process Evaluation, which will include survey interviews with participating and nonparticipating customers and trade allies, will be submitted before year-end 2009.

The second Process Evaluation will be scheduled for the January to April period of 2012.

The Process Evaluation reports will document changes to program processes during start-up annually thereafter, and the following information:

- Accuracy and completeness of program records (tracking database) to ensure that (1) reported accomplishments are accurate, and (2) data required to support Impact Evaluation efforts is being collected.
- Level of customer satisfaction at different points during the three-year program term.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors (i.e., the community groups) participating customers. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion activities.
- Effectiveness in overcoming barriers to participation.
- Remaining barriers to program participation, including an assessment of why some customers choose to not participate in the program.
- Reasons for participation; extent to which efficient equipment would have been installed without the program.
- Other energy efficiency purchases (e.g., those related to reducing electricity usage), and when these were made.
- Identification of lessons learned and specific actionable recommendations for program improvement.

Impact Evaluation – Detailed Activities

The Impact Evaluations will quantify the gross and net electricity savings attributable to program efforts based on (a) how the measures installed through this program actually perform, and (b) customer motivation to participate i.e., extent to which customer is a “free-rider). The first Impact evaluation will be performed during the spring of 2010, and will analyze data pertaining to measures installed during 2009. The second Impact evaluation will be performed during the spring of 2012, and will analyze data pertaining to measures installed during 2010 and 2011.

At this point in time, without counsel from the Evaluation Advisory Group, Central Hudson proposes the following Impact Evaluation plan.

- **Impact Evaluation Methodology:** A telephone survey of participating customers will be performed to obtain data on (a) disposition of each lamp purchased (installed, broken, given to another household), (b) if installed, location (room), (c) wattage of incandescent lamp replaced by each CFL, (d) annual hours of use for each lamp installed,⁵ and (e) program satisfaction and satisfaction with lamps.
- **Net-to-Gross (NTG) Factor:** Prior to any additional analysis being conducted, the Companies will use a 15% reduction for free-ridership net of spillover. The Impact Evaluations will produce Program-specific NTG assessments based on data collected via participant surveys.
- **Sampling Strategies and Design and Data Reliability Standards:** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III, Central Hudson's goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Company will develop sampling protocols for all of its evaluations based on this standard.
- **Steps to Identify and Mitigate Threats to Data Reliability:** The Company will review the detailed evaluation methodology submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain a 90% confidence interval within +/- 10 % precision and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to ensure data reliability to the greatest practical extent, including methods for minimizing systematic and random error and techniques for reducing uncertainty introduced by necessary assumptions and adjustments to the data.

Reporting

Central Hudson plans to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, the Company proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 90 days following the end of the calendar year.

The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year to date

⁵ The challenge is to ask this question in a way that is most likely to produce accurate information on lamp operating hours. The survey questionnaire used in a successful evaluation conducted for PECO Energy will be provided to the Evaluation Contractor.

- Program Marketing Expenditures, year to date
- Customer Incentive Expenditures, year to date
- Program Implementation Expenditures, year to date
- Evaluation & Market Research Experience, year to date
- Total Expenditures, year to date
- Program Year Budget, year to date
- Annual Budget
- Number of community group and customer Participants, year to date
- Number of CFLs of each size sold
- Participation Goal, year to date
- Annual Participant Goal for Program Year
- Total Savings (kWh, kW) year to date
- Savings Goal, year to date
- Annual Savings Goals for Program Year

5. Mid-Size Commercial Business Program – Evaluation Plan

Program Description

- **Program Objective:** The primary objective of this program is to help Central Hudson's customers in the bracket between the small commercial and industrial sectors to make their facilities more energy efficient, and thereby to reduce their energy usage and, correspondingly, the size of their energy bills. Specific sectors that will be focused on in this program are typically underserved by traditional C&I efficiency programs, and will include businesses such as hospitality (hotels and motels), restaurants, grocery stores, colleges, etc.

The energy efficiency program that we plan to offer, focuses on the 100 kW – 300 kW segment of our non-residential customers, and has the following components:

- Energy Upgrade Facilitation (i.e., energy audits where necessary coupled with implementation assistance)
- Rebates to make the economics of upgrading the efficiency of lighting, HVAC (including natural gas heating and water-heating), and other equipment powered by electricity or natural gas more economical and compelling.
- **Program Theory:** The key implementation barriers experienced by customers in the C&I sector are widely recognized to be:
 - Lack of information about what efficiency measures are available and effective,
 - Skepticism about the accuracy of cost-saving claims provided by contractors,
 - Lack of capital
 - Lack of expertise, staff resources and especially time to seek reliable information concerning efficiency measures, obtain quotes from vendors and contractors, verify references, and obtain financing.

The proposed Energy Upgrade Facilitation process is designed to overcome these barriers, eliminating or significantly reducing the inconvenience while providing incentive rebates based on energy savings from installed measures. Our approach provides comprehensive energy efficiency information, recommendations, and implementation assistance to support all aspects of a retrofit project, including the energy audits if necessary or assistance with interpreting prior audit recommendations, project recommendation, contractor selection, work scope management, and project inspection—all on behalf of the customer.

The results of any energy audit are reviewed and discussed. The discussion includes an explanation of cost-effectiveness, Central Hudson rebates, federal and state tax incentives, and non-energy benefits (e.g., more attractive appearance, more reliable operation, reduced Greenhouse gas emissions).

One of the keys to success will be an active involvement by Central Hudson in customer outreach and recruiting, since Central Hudson's research has shown that customers tend to trust recommendations made by Company representatives.

- **Program Administration and Delivery:** The program will be administered by Central Hudson working closely with a selected implementation vendor who will be responsible for marketing the program to HVAC contractors and dealers, electrical contractors and

electricians, lighting equipment dealers and distributors, and plumbers in the Company's service territory, operating a call center, quality assurance inspections, maintaining program records in a computerized tracking system, rebate fulfillment, and producing weekly status reports.

- **Quality Assurance (QA) Inspections:** QA inspections will be performed of 100% of equipment installations.
- **Per-Unit Measure Savings:** Energy and demand savings will be calculated for each measure installed, using standardized protocols and published efficiency, efficacy, and energy-use parameters. These protocols and commonly used data parameters will be documented in the program's Technical Reference Manual, which will be reviewed and approved by the Evaluation Contractor prior to program launch.
- **Targeted Participation Levels and Savings:** Program participation is estimated to increase by more than 100% each year during the three-year duration, as an ever-increasing number of trade allies become familiar with it. The tables on the following two pages provide our expectation of cumulative savings that will be achieved at the end of the program term.

Installed measures are defined as follows:

- Lighting-1: Lighting measures involving several different fixture types that use pin-base CFL lamps LED Exit signs, and 4-foot T8 and T5 lamps.
- Lighting-2: Lighting measures involving occupancy sensing and daylight-dimming controls.
- HVAC-1: High-efficiency central air-conditioning and air-source heat pump units.
- HVAC-2: Ground-source heat pump units and heat pump water heaters.
- Custom: A variety of motor, motor controls (i.e., variable speed drives - VSDs), refrigeration measures.

The following two tables present targeted participation (units installed) and net savings during each year of the program. (A net-to-gross ratio of 95% was assumed, pending completion of the Impact Evaluation.)

Equipment	Year	Units	MWh/yr Saved (Net)	kW Reduction (Net)
Lighting-1	2009	2500	1,445	263
	2010	5000	2,890	525
	2011	7000	4,046	735
		14,500	8,381	1,523
Lighting-2	2009	200	297	39
	2010	400	594	77
	2011	600	891	116
		1,200	1,783	232
HVAC-1	2009	160	413	339
	2010	350	904	742
	2011	550	1,420	1,166
		1,060	2,736	2,246
HVAC-2	2009	142	135	43
	2010	426	404	130
	2011	852	809	259
		1,419	1,348	432
Custom	2009	175	214	71
	2010	298	363	121
	2011	875	770	257
		1,348	1,347	449
		TOTAL	15,595	4,883

Equipment	Year	Units	Therms Saved (Net)
Furnace	2009	25	8,170
	2010	50	16,340
	2011	50	16,340
		125	40,850
Boiler	2009	20	5,206
	2010	35	9,111
	2011	35	9,111
		90	23,427
Water Heating	2009	30	1,283
	2010	60	2,565
	2011	60	2,565
		150	6,413
Totals	2009	75	14,659
	2010	145	28,016
	2011	145	28,016
		365	70,690

- **Program Schedule:** Central Hudson plans to begin offering this program to customers on January 1, 2009, subject to Commission approval.
- **Program Tracking Database (PTD):** The PTD will contain program verified data compiled from Agreement forms, Energy Audits, QA inspections, and bank statements verifying incentive and trade ally payment checks were deposited. The PTD supports program evaluation through the collection of all relevant data pertaining to (1) customer and trade ally participants, (2) building owner and property manager (if applicable), and (3) measures recommended and installed. Examples of project- and measure-specific data that will be compiled in the PTD include:
 - Dates when meetings with customers occurred
 - Dates when Energy Audits began and were completed
 - Date when Program Participation Agreement was signed
 - Equipment to be installed (Type, make, model number, serial number, capacity rating, efficiency rating)
 - Equipment to be replaced (Type, make, model number, serial number, capacity rating, efficiency rating)
 - Date when of installation completed
 - Installation location
 - Characteristics of business (type, number of employees)
 - Characteristics of host facility (type of building, heated floorspace, cooled floorspace, major electricity and fuel end-uses, and estimated annual usages)
 - Project work order number
 - QA inspection date(s)
 - Annualized energy savings (both by measure and total for project)

- Measure life (for each measure)
- Measure installed cost (both by measure and total for project)
- Incentive payment amount (both by measure and total for project)
- Date incentive and payment checks mailed
- Date each check returned to bank

Evaluation Approach – Overview

In December 2008 Central Hudson will select and contract with an individual or firm that has extensive prior experience in performing process and impact evaluations. A *Process Evaluation* will be performed during Year One and immediately after Year Three, with an objective of identifying enhancements that can be made to implementation efforts that may contribute to improved results. *Impact Evaluations* will be performed during Year Two and after Year Three.

Consistent with the Working Group III recommendation in the EEPS proceeding, Central Hudson has budgeted approximately 5% of the program budget to fund evaluation efforts.

Central Hudson anticipates that its evaluation efforts will be informed by the ongoing efforts of the newly formulated Evaluation Advisory Group and by collaboration with the other utilities in the State that are planning to implement a similar program. The Company may participate in jointly sponsored evaluation studies with the other utilities.

Process Evaluation – Detailed Activities

The initial Process Evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying in an initial report improvements that can be made to program implementation efforts. A final report summarizing results from the Process Evaluation, which will include survey interviews with participating and nonparticipating customers and trade allies, will be submitted before year-end 2009.

The second Process Evaluation will be scheduled for the January to April period of 2012.

The Process Evaluation reports will document the following information:

- Accuracy and completeness of program records (tracking database) to ensure that (1) reported accomplishments are accurate, and (2) data required to support Impact Evaluation efforts is being collected.
- Level of customer satisfaction at different points during the three-year program term.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors, program customers, trade allies and other key stakeholders. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion activities.
- Effectiveness in overcoming barriers to participation on the part of both customers and trade allies.
- Remaining barriers to program participation, including an assessment of why some customers and trade allies choose to not participate in the program.
- Reasons for participation; extent to which efficient equipment would have been installed without the program.⁶

⁶ The second part pertains to net-to-gross ratio.

- Other energy efficiency purchases (e.g., those related to reducing electricity usage), and when these were made.
- Identification of lessons learned and specific actionable recommendations for program improvement.

Impact Evaluation – Detailed Activities

The Impact Evaluations will quantify the gross and net gas savings attributable to program efforts based on (a) how the measures installed through this program actually perform, and (b) customer motivation to participate i.e., extent to which customer is a “free-rider). Results will be obtained for each measure category (i.e., each tier of each measure type). The first Impact evaluation will be performed during the summer of 2010, and will analyze data pertaining to measures installed during 2009. The second Impact evaluation will be performed during the summer of 2012, and will analyze data pertaining to measures installed during 2010 and 2011.

At this point in time, without counsel from the Evaluation Advisory Group, Central Hudson proposes the following Impact Evaluation plan.

- **Impact Evaluation Methodology:** A regression analysis of billed electricity usage (for electrical measures) and of gas-usage (for gas measures) will be performed that includes both participants and a control group of similar facilities that did not install measures. Billed energy usage for at least a year prior to measure installation will be analyzed. Other explanatory variables (presence of other electricity and gas-using equipment, heating degree-days, facility type and size, and number of occupants) will be included in the analysis. This analysis will require an on-site survey to obtain accurate facility-specific data.
- **Net-to-Gross (NTG) Factor:** Prior to any additional analysis being conducted, the Companies will use a 5% reduction for free-ridership net of spillover. The Impact Evaluations will produce Program-specific NTG assessments based on data collected via participant surveys.
- **Sampling Strategies and Design and Data Reliability Standards:** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III, Central Hudson’s goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Company will develop sampling protocols for all of its evaluations based on this standard.
- **Steps to Identify and Mitigate Threats to Data Reliability:** The Company will review the detailed evaluation methodology submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain a 90% confidence interval within +/- 10 % precision and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to ensure data reliability to the greatest practical extent, including methods for minimizing systematic and random error and techniques for reducing uncertainty introduced by necessary assumptions and adjustments to the data.

Reporting

Central Hudson plans to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, the Company proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 90 days following the end of the calendar year.

The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year to date
- Program Marketing Expenditures, year to date
- Customer Incentive Expenditures, year to date
- Program Implementation Expenditures, year to date
- Evaluation & Market Research Experience, year to date
- Total Expenditures, year to date
- Program Year Budget, year to date
- Annual Budget
- Number of Rebates (or Participants), year to date
- Participation Goal, year to date
- Annual Participant Goal for Program Year
- Total Savings (kWh, kW, therms), year to date
- Savings Goal, year to date
- Annual Savings Goals for Program Year