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BEFORE THE ARIZONA CORPORATION COMMISSION

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| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF UNS GAS, INC. FOR APPROVAL OF ITS PROPOSED DEMAND-SIDE MANAGEMENT ("DSM") PORTFOLIO FOR 2008-2012 | DOCKET NO. G-04204A-07-0274<br><br>**UNS GAS, INC.'S REQUEST FOR APPROVAL TO REDESIGN ITS C&I FACILITIES GAS EFFICIENCY PROGRAM** |

UNS Gas, Inc. ("UNS Gas" or "Company"), through undersigned counsel, hereby respectfully requests that the Arizona Corporation Commission ("Commission") issue an order approving its application to enhance the UNS Gas Commercial and Industrial ("C&I") Facilities Gas Efficiency Program (the "Program"), effective January 1, 2010.

## I. INTRODUCTION

In Decision No. 70180 (February 27, 2008), the Commission approved the UNS Gas Demand-Side Management ("DSM") Portfolio for 2008 through 2012 (the "DSM Portfolio"). Included in the DSM Portfolio is the C&I Facilities Gas Efficiency Program that was launched to customers in the UNS Gas service territory on June 16, 2008. Through June 30, 2009, participation of the Program has been limited, with only five installations of high-efficiency furnaces for three total customers. Further, none of our customers took advantage of the service and domestic water heating or commercial food service equipment incentives available under the original program.

UNS Gas and the implementation contractor began collecting and analyzing information early in 2009 regarding the lake of participation in the C&I Program. UNS Gas revisited the overall design and delivery of this program, updated incremental costs, reviewed efficiency thresholds, and reviewed associated incentive levels and program delivery strategies.

## II. INCENTIVES

To make the Program more attractive to Commercial customers, UNS Gas respectfully requests the Commission's approval to expand the incentives that a customer can receive for high efficiency gas appliances, as detailed in the Program. Since the Commission adopted UNS Gas' DSM Portfolio, UNS Gas has met with Staff on three occasions in 2009 to discuss how the DSM Portfolio should be evaluated. As a result of these meetings, Staff and UNS Gas have agreed upon a methodology based on the use of the Societal Cost Test ("SCT"). With this agreement in place, UNS Gas is confident that the expanded list of high efficiency equipment will qualify under the SCT.

## III. DIRECT PROMOTION IN RURAL AREAS

UNS Gas realizes that in predominately rural communities, and especially in vast geographical territories, more direct promotion of the Program is required to increase participation. As such, UNS Gas respectfully requests the Commission's approval to increase the Program's delivery budget to allow one or two field representatives to be present in the UNS Gas territory.

## IV. ORIGINAL PROGRAM VS. NEW (REDESIGNED) PROGRAM

The result of this redesign work is a new program offering. The major differences between the original program design and the new redesign include:

- New methodology of evaluating cost-effectiveness resulting in a significant number of new measure offerings;
- Updated minimum efficiency levels for some measures;
- Updated incremental costs;
- Significant changes in incentives offered to customers;
- Changes in the delivery mechanism planned for the program; and
- Increased program budget and incremental increase to the DSM adjustor mechanism

## V. RECOVERY OF COSTS AND BUDGET

UNS Gas respectfully requests Commission approval to increase the Program Budget through the DSM Surcharge. The incremental increase in the DSM Surcharge (adjustor mechanism) to recover the cost for redesigned Program will be $0.0016 for 2010, $.0026 for 2011, and $.0037 for 2012, as shown below.

| Year | 2010 | 2011 | 2012 |
|---|---|---|---|
| Original Program Budget | $212,180 | $218,545 | $225,102 |
| Program Redesign Budget | $393,568 | $504,819 | $620,363 |
| Incremental Increase in Program Budget | $181,388 | $286,274 | $395,261 |
| *Incremental Increase in Redesigned Program Adjustor Mechanism | $.0015 | $.0024 | $.0033 |

*Forecasted Retail Sales (including unbilled therms) TME May 31, 2010 $119,932,651

## VI. CONCLUSION

Wherefore, for all the foregoing reasons, UNS Gas respectfully requests Commission approval of the redesign of the UNS Gas C&I Facilities Gas Efficiency Program in order to 1) enhance the Program to increase participation; and 2) recover the costs associated with redesign of the Program through the DSM Surcharge. The requested effective date of the redesigned Program is January 1, 2010.

RESPECTFULLY SUBMITTED this 2d day of September 2009.

UNS Gas, Inc.

By _____

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# Attachment 1

## UNS Gas, Inc.

## C&I Facilities Gas Efficiency Program

## Program Redesign

## Table of Contents

Program Concept and Description ..... 1
Program Objectives ..... 1
Program Rationale ..... 1
Target Market and Eligibility Requirements ..... 2
Estimate of Baseline Conditions ..... 2
Products and Services Provided ..... 2
Program Delivery Strategy ..... 4
Program Marketing and Communications Strategy ..... 4
Program Implementation Schedule ..... 5
Estimated Energy Savings and Environmental Benefits ..... 5
Program Cost Effectiveness ..... 6
Program Costs ..... 8
Measurement, Evaluation, and Research ..... 10
Appendix 1 – Measure Level Energy Savings and Benefit/Cost Analysis ..... 11

# UNS Gas, Inc.'s C&I Facilities Gas Efficiency Program

## Program Concept and Description

UNS Gas, Inc.'s ("UNS Gas") Commercial and Industrial ("C&I") Facilities Gas Efficiency Program (the "Program") provides prescriptive incentives for the installation of high-efficiency gas-fueled equipment and systems, including space heating, service and domestic water heating, and commercial food service equipment. Prescriptive incentives are offered for a schedule of measures in each of these categories. The schedule of measures and incentives is provided in Table 1 Prescriptive Incentives and Efficiency Requirements, below.

The viability of each of the prescriptive measures has been assessed through a cost-effectiveness analysis. The cost-effectiveness tests account for the energy (therm) savings of each measure, the associated avoided costs and net benefits to UNS Gas, the customer incremental or installed costs, and the program administration costs.

The program includes consumer educational and promotional pieces designed to assist facility operators and decision makers with the information necessary to improve the energy efficiency of gas-fueled equipment and systems in their facilities. The program includes customer and trade ally education to assist with understanding of what technologies are being promoted, what incentives are offered, and how the program functions.

## Program Objectives

The primary goal of the program is to encourage UNS Gas' non-residential customers to install energy efficiency measures in gas-fueled systems in existing facilities. More specifically, the program is designed to:

- Provide incentives to facility operators for the installation of high-efficiency gas fueled space heating, service and domestic water heating, and commercial food service equipment (see Table 1 for the schedule of measures and incentives);
- Overcome market barriers, including:
  - Lack of awareness and knowledge about the benefits and cost of energy efficiency improvements;
  - Performance uncertainty associated with energy efficient equipment;
  - Higher first costs for energy efficient equipment;
- Assure that the participation process is clear, easy to understand and simple; and
- Increase the awareness and knowledge of facility operators, managers and decision-makers on the benefits of high-efficiency equipment and systems.

## Program Rationale

Certain barriers exist to the adoption of energy efficiency measures, such as the lack of investment capital, competition for funds with other capital improvements, lack of awareness/knowledge about the

benefits and costs of energy efficiency measures, availability of high efficiency options, high transaction and information search costs, and technology performance uncertainties. This program is designed to help overcome these market barriers and encourage greater adoption of energy efficiency measures in gas-fueled systems in customer facilities.

In addition to helping customers reduce and manage their energy costs, this program provides other societal and customer benefits, including reduced greenhouse gas emissions, improved levels of service from energy expenditures, and lower overall rates and energy costs compared to other resource options.

## Target Market and Eligibility Requirements

All non-residential customers in the UNS Gas service region that receive natural gas service from UNS Gas are eligible to participate in the program. Existing systems that are being replaced on burnout or retired early and systems installed during new construction projects are all eligible for the program. Applications will be reviewed by UNS Gas to determine that the facility is within the UNS Gas service region, the proposed equipment meets energy efficiency standards to qualify for incentive payments and that all necessary specifications are provided to determine the energy impact after installation.

## Estimate of Baseline Conditions

UNS Gas had not conducted a formal baseline study of the existing non-residential market for gas-fueled equipment and systems. However, in preparing the analysis of each of the measures included in this plan, the baseline performance conditions of each technology were estimated based on best available knowledge of current market conditions and technology applications. Resources used for the estimation of both baseline and energy efficiency technology performance and cost included (i) the California Database of Energy Efficiency Resources ("DEER"); (ii) detailed engineering modeling and simulation specific to the region; (iii) data from recognized industry resources such as the Consortium of Energy Efficiency ("CEE") and American Society of Heating Refrigeration and Air Conditioning Engineers ("ASHRAE") ; (iv) manufacturers data; and (v) data accumulated from similar analysis for other regional utilities.

## Products and Services Provided

The C&I Facilities Gas Efficiency Program is a customer incentive program design that provides rebates for the installation of energy efficiency measures in existing non-residential facilities. More specifically, the program offers the following products and services:

- Consumer education and promotion designed to provide facility operators and decision makers with the information necessary to improve the energy efficiency of gas-fueled space heating, service and domestic water heating, and commercial cooking systems;
- Education and promotional efforts for customers and trade allies on how the program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures; and
- Prescriptive incentives to encourage the adoption of energy efficiency measures.

Prescriptive measures and incentives provided by the program are included in Table 1, below, which includes average incentives per unit and unit definition. These are expected incentive levels based on market participation.

**Table 1. Prescriptive Incentives and Efficiency Requirements**

| Measure Description | Incentive/Measure | Efficiency Level |
|---|---|---|
| **Space Heating Measures** | | |
| High Efficiency Furnace | $200 | >=90 AFUE |
| High Efficiency Furnace | $300 | >=92 AFUE |
| High Efficiency Furnace | $375 | >=94 AFUE |
| High Efficiency Space Heating Boilers (Hot Water) < 300,000 Btuh | $5 per 1,000 Btuh up to $1,000 per unit cap (Avg. rebate: $800 for 160,000 Btuh unit) | AFUE ≥85% |
| High Efficiency Space Heating Boilers (Hot Water) ≥300,000 Btuh | $2 per 1,000 Btuh up to $2,000 per unit cap (Avg. rebate: $1,500 for 750,000 Btuh unit) | Thermal Efficiency ≥85% |
| High Efficiency Condensing Unit Heaters | $400 | Thermal Efficiency ≥90% |
| High Efficiency Power Vented Unit Heaters for Early Retirement of existing gravity vented heaters (Retrofit) | $2,000 | Thermal Efficiency ≥83% |
| **Water Heating Measures** | | |
| Energy Efficient Storage Water Heater (combined residential and commercial offering) ≤75,000 Btuh | $50 | ≥0.62 EF |
| Energy Efficient Storage Water Heater >75,000 Btuh | $5 per 1,000 Btuh; $2,500 per unit cap (Avg. rebate $1,000 for a 200,000 Btuh unit) | Thermal Efficiency ≥90% |
| Commercial Pool and Spa Heaters ≤500,000 Btuh | $150 | Thermal Efficiency ≥86% |
| **Laundry Measures** | | |
| Commercial Clothes Washer | $100 | MEF ≥1.80, WF ≤7.5 |
| **Commercial Food Service Measures** | | |
| High Efficiency Gas Griddle | $250 | >=38% |
| High Efficiency Gas Combination Oven | $1,000 | >=40% |
| High Efficiency Gas Convection Oven | $1,000 | >=40% |
| High Efficiency Gas Conveyer Oven <25 inches | $400 | >=42% |
| High Efficiency Gas Conveyer Oven >25 inches | $900 | >=42% |
| High Efficiency Gas Rack Oven (single or double) | $1,000 | >=50% |
| High Efficiency Fryer | $900 | >=50% |
| High Efficiency Large Vat Fryer | $900 | >=50% |
| High Efficiency Gas Steamer | $1,750 | >=38% |
| Low-flow pre-rinse spray valves (retrofit existing spray valves that use > 2.6 gpm) | Free- Direct Install | 1.6 gpm @ 60psi |

## Program Delivery Strategy

Because of the vast geographic territory and the predominantly rural nature of the communities, UNS Gas realized that more direct promotion of the program would be required to increase participation. As such, the program delivery budget is intended to allow two field representatives to be present in the territory to directly contact customers and directly market the program to trade allies and customers. The redesigned C&I Facilities Gas Efficiency Program will therefore be implemented by a combined approach of a utility account representative to provide an important contact point to provide direct customer promotion as well as employing the services of a qualified implementation contractor to provide program administration, application and incentive processing, participation tracking and reporting and technical support. The implementation contractor and the account representative will jointly develop key partnering relationships including: the local architectural and engineering community; electrical and mechanical contractors; equipment manufacturers, distributors and vendors; professional and trade service associations; and the Arizona Energy Office. As part of the implementation plan, UNS Gas will conduct outreach to these partner groups and provide education and training on the benefits and functioning of the program.

UNS Gas will also continue to provide an in-house program manager to oversee the activities of the implementation contractor, provide guidance on program activities that is consistent with UNS Gas' goals and customer service requirements, and provide overall quality control and management of the delivery process.

## Program Marketing and Communications Strategy

The marketing and communications strategy is to inform customers of the availability and benefits of the program and how they can participate in the program. The marketing and communications plan will include outreach to key partners and trade allies, relevant professional and trade associations, and other parties of interest in the market. An important part of the marketing plan will be content and functionality on the UNS Gas website, which will direct customers to information about the program. More specifically, the marketing and communications plan will include:

- Education seminars implemented in each market to provide details about how to participate in the program. The seminars will be tailored to the needs of business owners, building managers, architects, engineers, vendors, and contractors.
- A combination of strategies includes outreach and presentations at professional and community forums and events, and direct outreach to key customers and customer representatives. Marketing activities will include:
    - Brochures that describe the benefits and features of the program, including program application forms and worksheets. The brochures will be mailed upon demand and distributed through the call center and the UNS Gas website, and will be available for various public awareness events (school training, presentations, seminars etc);
    - Targeted mailing to educate customers on the benefits of the program and explain how they can apply;
    - Customer and trade partner outreach and presentations (e.g., school associations, BOMA, ASHRAE) informing interested parties about the benefits of the program and how to participate;

- Website content providing program information resources, contact information, downloadable application forms and worksheets, and links to other relevant service and information resources;
- UNS Gas customer care representatives trained to answer any customer questions regarding the program;
- Presence at conferences and public events used to increase general awareness of the program and distribute program promotional materials; and
- Presentations by the program manager to key customers and customer groups to actively solicit their participation in the program.

- The marketing strategy will identify key customer segments and groups for target marketing, including the school districts, commercial kitchens and Laundromats, and will prepare specific outreach activities for these customers.
- UNS Gas will design and develop the content, messaging, branding, and calls-to-action of all marketing and collateral materials used to promote the program.
- The implementation contractor will be responsible for assisting with program promotion, including customer contact, attendance at public presentations and events, and will be the primary contact point from the website and other promotional materials.

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## Program Implementation Schedule

Upon approval by the Arizona Corporation Commission (the "Commission"), UNS Gas will proceed to redesign incentive forms and prepare a new marketing and outreach strategy. At this time, UNS Gas anticipates receiving Commission approval prior to the end of 2009, to allow a public launch of the redesigned program effective January 1, 2010.

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## Estimated Energy Savings and Environmental Benefits

Total annual energy savings goals are presented in Table 2, below. Appendix 1 provides further information about estimated energy savings for each measure category, including the measure and program level benefit cost analysis. Appendix 1 also provides the expected project technology mix for 2010-2012, which is considered to be the template for all program years.

**Table 2. Projected Energy Benefits (Program Redesign)**

| Program (Redesign) | C&I | | | |
|---|---|---|---|---|
| Program Year | 2010 | 2011 | 2012 | Total |
| Energy Savings | | | | |
| Annual (Therms) | 74,010 | 144,849 | 218,439 | 437,298 |
| Lifetime (Therms) | 1,094,877 | 2,132,654 | 3,225,431 | 6,452,962 |

After the 2010 ramp up of the expanded program, energy savings is expected to significantly surpass energy savings expectations from the original program design shown in Table 3, below.

**Table 3. Projected Energy Benefits (Original Program design)**

| Energy Savings (Original Program) | 2010 | 2011 | 2012 |
|---|---|---|---|
| Energy Savings (therms) | 92,364 | 95,135 | 97,989 |
| Energy Savings (kWh) | 1,949 | 2,008 | 2,068 |

As a result of the energy savings shown in Tables 2 and 3, it is estimated that the program will produce environmental benefits through avoided emissions of carbon dioxide ($CO_2$) and other pollutants. The estimated avoided emissions from $CO_2$ for 2010 – 2012 are shown below in Table 4.

**Table 4. Projected Environmental Benefits, 2010 – 2012**

| CO2 Reductions | 2010 | 2011 | 2012 | Total |
|---|---|---|---|---|
| Annual (Tons) | 437 | 855 | 1,289 | 2,580 |
| Lifetime (Tons) | 6,460 | 12,583 | 19,030 | 38,072 |

## Program Cost Effectiveness

Table 5, below, provides a summary of the benefit/cost analysis results for this program according to the Total Resource Cost test ("TRC") and the Societal Cost Test ("SCT") at the program level using the methodology and avoided cost information approved by Commission Staff ("Staff"). For the SCT, UNS Gas included an estimated externality cost associated with avoided carbon emissions beginning in 2012, with a low of $14/ton (SCT Low), medium at $25/ton (SCT Med), and high at $43/ton (SCT High), and all carbon values escalating over time.

Although Staff advised UNS Gas to go ahead and include a valuation of CO2 in the benefit-cost calculations, Staff and UNS Gas also understand it is up to the Commission to accept or deny this value. Until the Commission provides a formal acceptance regarding inclusion of CO2 in the calculation of the SCT, UNS Gas will continue to provide results of the TRC test for Commission review.

**Table 5. Program Level Benefit-Cost Results**

| Benefit Cost Tests | |
|---|---|
| TRC | 2.0 |
| SCT Low | 2.3 |
| SCT Med | 2.5 |
| SCT High | 2.7 |

Staff also requires that each measure within a program meet the benefit/cost analysis according to the TRC test and the SCT using the methodology and avoided cost information approved by Staff. A summary of the measure level benefit-cost analysis is included in Table 6 below.

**Table 6. Measure Level Benefit-Cost Results**

| Benefit Cost Test | TRC | SCT Low | SCT Med | SCT High |
|---|---|---|---|---|
| HE Furnace 90 AFUE | 4.8 | 5.8 | 6.1 | 6.5 |
| HE Furnace 92 AFUE | 4.2 | 5.2 | 5.5 | 5.8 |
| HE Furnace 94 AFUE | 4.0 | 4.8 | 5.1 | 5.4 |
| NCond Boiler <300 kBtuh | 1.1 | 1.3 | 1.4 | 1.5 |
| NCond Boiler >=300 kBtuh | 3.1 | 3.7 | 3.9 | 4.2 |
| Cond Unit Heaters | 3.4 | 5.9 | 6.2 | 6.6 |
| Power Vented Unit Heaters | 4.0 | 4.6 | 4.8 | 5.1 |
| EE Storage Water Heater <= 75 kBtuh | 1.0 | 1.1 | 1.2 | 1.3 |
| EE Storage Water Heat >75 kBtuh | 1.0 | 2.2 | 2.3 | 2.4 |
| Commercial Pool Spa Heaters (<=500kBtuh) | 1.3 | 1.5 | 1.5 | 1.6 |
| Commercial Clothes Washer | 1.8 | 2.1 | 2.3 | 2.4 |
| HE Gas Griddle | 0.9 | 1.1 | 1.2 | 1.3 |
| HE Gas Combination Oven | 1.2 | 1.4 | 1.5 | 1.6 |
| HE Gas Convection Oven | 1.0 | 1.1 | 1.2 | 1.3 |
| HE Gas Conveyer Oven <25in | 5.6 | 6.7 | 7.1 | 7.6 |
| HE Gas Conveyer Oven >25in | 2.9 | 3.4 | 3.6 | 3.9 |
| HE Gas Rack Oven | 8.2 | 9.7 | 10.3 | 11.0 |
| HE Fryer | 1.2 | 1.5 | 1.6 | 1.7 |
| HE Large Vat Fryer | 1.5 | 1.7 | 1.8 | 2.0 |
| HE Gas Steamer | 2.8 | 3.3 | 3.5 | 3.7 |
| LoFlow Pre-rinse Spray Valves | 1.1 | 1.1 | 1.2 | 1.2 |

*Societal cost values on measure and program basis calculated with Analytica software model, version : UNS Gas Benefit Cost Model v14.ANA

In addition to estimating the savings from each measure, this analysis relies on a range of other assumptions and financial data provided in Table 7. Because each individual measure has a unique avoided cost and economic useful life, these metrics are not provided in Table 7, but can be found in the individual measure analysis worksheets for each item included in Appendix 1.

**Table 7. Other Financial Assumptions**

| | |
|---|---|
| Incentives as Percent of Total Budget over Three Years (2010-2012) | 36% |
| TRC Discount Rate | 7.0% |
| Social Discount Rate | 7.00% |
| Weighted Average Net-To-Gross Ratio: | 100% |

## Program Costs

Because of the significant expansion of measures available in this program redesign, rebates will be available to a significantly higher number of customers. Therefore, UNS Gas proposes to increase the incentive portion of the budget and also increase the total budget to allow for one or two full time field representatives to promote the program directly to trade allies and customers. Given the expansive geographic territory of UNS Gas, delivery of this program will be more expensive than in a more compressed and concentrated geographic area, which will result in a higher percent of administrative and delivery costs to total budget. Additionally, participation in this program to date has been quite low, thus the need for additional marketing and field support staff. These additional non-incentive costs in 2010 and 2011 represent the majority of the budget; however, UNS Gas feels this is necessary to cement the program opportunity with customers and trade allies. UNS Gas forecasts that in 2012 participation will increase and the ratio of incentives to non-incentive costs will start to approach 50%.

Table 8, below, presents a detailed budget estimate, focusing on estimated units rebated per year, incentive costs, program delivery, utility administration, and measurement, evaluation, and research costs. Budgets are increasing over time, reflecting anticipated increases in program participation. A comparison to the original program design budget and the incremental increase in budget and necessary DSM adjustor to provide this expanded program offering is included in Table 9, below.

## Table 8. 2010-2012 Program Budget

| | Efficiency Level | Incentive / Measure | Units Rebated | | | Budget | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| **Incentives** | | | | | | | | |
| High Efficiency Furnace ( C&I) | >=90 AFUE | $200 | 10 | 20 | 30 | $2,000 | $4,000 | $6,000 |
| High Efficiency Furnace (C&I) | >=92 AFUE | $300 | 10 | 15 | 25 | $3,000 | $4,500 | $7,500 |
| High Efficiency Furnace ( C&I) | >=94 AFUE | $375 | 10 | 15 | 25 | $3,750 | $5,625 | $9,375 |
| High Efficiency Space Heating Boilers (Hot Water) < 300,000 Btuh | ≥ 85% AFUE | $800 | 5 | 10 | 15 | $4,000 | $8,000 | $12,000 |
| High Efficiency Space Heating Boilers (Hot Water) ≥ 300,000 Btuh | Thermal Efficiency ≥ 85% | $1,500 | 5 | 10 | 15 | $7,500 | $15,000 | $22,500 |
| High Eff Condensing Unit Heaters | Thermal Efficiency ≥ 90% | $400 | 10 | 20 | 30 | $4,000 | $8,000 | $12,000 |
| High Eff Power Vented Unit Heaters for Early Retirement of existing gravity vented heaters (Retrofit) | Thermal Efficiency ≥ 83% | $2,000 | 5 | 10 | 15 | $10,000 | $20,000 | $30,000 |
| Energy Efficient Storage Water Heater (combined residential and commercial offering) ≤ 75,000 Btuh | ≥ 0.62 EF | $50 | 10 | 20 | 30 | $500 | $1,000 | $1,500 |
| Energy Efficient Storage Water Heater >75,000 Btuh | Thermal Efficiency ≥ 90% | $1,000 | 10 | 20 | 30 | $10,000 | $20,000 | $30,000 |
| Commercial Pool and Spa Heaters ≤ 500,000 Btuh | Thermal Efficiency ≥ 86% | $150 | 5 | 10 | 15 | $750 | $1,500 | $2,250 |
| Commercial Clothes Washer | MEF ≥ 1.80, WF ≤ 7.5 | $100 | 25 | 50 | 75 | $2,500 | $5,000 | $7,500 |
| High Efficiency Gas Griddle | 38% | $250 | 5 | 10 | 15 | $1,250 | $2,500 | $3,750 |
| High Efficiency Gas Combination Oven | 40% | $1,000 | 5 | 10 | 15 | $5,000 | $10,000 | $15,000 |
| High Efficiency Gas Convection Oven | 40% | $1,000 | 5 | 10 | 15 | $5,000 | $10,000 | $15,000 |
| High Efficiency Gas Conveyer Oven <25 inches | 42% | $400 | 5 | 10 | 15 | $2,000 | $4,000 | $6,000 |
| High Efficiency Gas Conveyer Oven >25 inches | 42% | $900 | 5 | 10 | 15 | $4,500 | $9,000 | $13,500 |
| High Efficiency Gas Rack Oven (single or double) | 50% | $1,000 | 5 | 10 | 15 | $5,000 | $10,000 | $15,000 |
| High Efficiency Fryer | 50% | $900 | 5 | 10 | 15 | $4,500 | $9,000 | $13,500 |
| High Efficiency Large Vat Fryer | 50% | $900 | 5 | 10 | 15 | $4,500 | $9,000 | $13,500 |
| High Efficiency Gas Steamer | 38% | $1,750 | 5 | 10 | 15 | $8,750 | $17,500 | $26,250 |
| Low-flow pre-rinse spray valves (retrofit existing spray valves that use > 2.6 gpm) | 1.6 gpm @ 60psi | $72 | 20 | 30 | 40 | $1,440 | $2,160 | $2,880 |
| **Subtotal Financial Incentives** | | | | | | **$89,940** | **$175,785** | **$265,005** |
| | | | | | | | | |
| **Program Delivery** | | | | | | | | |
| Program Delivery | | | | | | $250,000 | $257,500 | $265,225 |
| Program Marketing | | | | | | $13,491 | $26,368 | $39,751 |
| **Subtotal Program Delivery** | | | | | | **$263,491** | **$283,868** | **$304,976** |
| | | | | | | | | |
| **Utility Program Administration** | | | | | | | | |
| UNSG Program Administration | | | | | | $25,000 | $25,750 | $26,523 |
| **Subtotal Utility Program Administration** | | | | | | **$25,000** | **$25,750** | **$26,523** |
| | | | | | | | | |
| **Evaluation** | | | | | | | | |
| Measurement, Evaluation and Research | | | | | | $15,137 | $19,416 | $23,860 |
| **Subtotal Evaluation** | | | | | | **$15,137** | **$19,416** | **$23,860** |
| | | | | | | | | |
| **TOTAL** | | | | | | **$393,568** | **$504,819** | **$620,363** |
| | | | | | | | | |
| **Incentives as % of Total Budget** | | | | | | **23%** | **35%** | **43%** |

## Table 9. Comparison of Total Program Budgets and Adjustors

| Year | 2010 | 2011 | 2012 |
|---|---|---|---|
| Original Program Budget | $212,180 | $218,545 | $225,102 |
| Program Redesign Budget | $393,568 | $504,819 | $620,363 |
| Incremental Increase in Program Budget | $181,388 | $286,274 | $395,261 |
| *Incremental Increase in Redesigned Program Adjustor Mechanism | $.0015 | $.0024 | $.0033 |

*Forecasted Retail Sales (including unbilled therms) TME May 31, 2010 119,932,651

## Measurement, Evaluation, and Research

UNS Gas is adopting a strategy that calls for integrated data collection that is designed to provide a quality data resource for program tracking, management and evaluation. This approach will entail the following primary activities:

- **Database management** - As part of program operation, UNS Gas will collect the necessary data elements to populate the tracking database and provide periodic reporting.
- **Integrated implementation data collection.** UNS Gas will work with the implementation contractor to establish systems to collect the data needed to support effective program management and evaluation through the implementation and customer application processes. The database tracking system will be integrated with implementation data collection processes.
- **Field verification.** UNS Gas will conduct field verification of the installation of a sample of measures throughout the implementation of the program.
- **Tracking of savings using deemed savings values.** UNS Gas will develop deemed savings values for each measure and technology promoted by the program and periodically review and revise the savings values to be consistent with program participation and accurately estimated the savings being achieved by the program.

This approach will provide UNS Gas with ongoing feedback on program progress and enable program management to adjust or correct the program so as to be more effective, provide a higher level of service, and be more cost beneficial. Integrated data collection will also provide a high quality data resource for evaluation activities.

## Appendix 1 – Measure Level Energy Savings and Benefit/Cost Analysis

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY GAS FURNACE

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 20 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.84210 |
| Ratio of Non-inc to Incentive Costs | 40.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Htg. Season Hrs.: | 2,460 |
| Htg. Season Load Factor: | 0.80 |
| Peak Day Load Factor: | 0.80 |

| RATE DATA | |
|---|---|
| $/Therm | $0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors | |
|---|---|
| AFUE =90 | 60% |
| AFUE =92 | 30% |
| AFUE =94 | 10% |

| DEMAND/ENERGY SAVINGS | | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Size | Base Capacity (Btuh) | Base Eff. | High Eff. | Peak Day Savgs. Per Unit (Therms) | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HI-E FURNACE | <300,000 Btuh | 80000 | 0.80 | 0.90 | 2.13 | 219 | $1,951 | $1,951 | $200 | 10% | $410 | $1,541 | $330 | $0 | $179 | 1.8 | 0.7 | 60% | 61% | 4.76 |
| HI-E FURNACE | <300,000 Btuh | 80000 | 0.80 | 0.92 | 2.50 | 257 | $2,290 | $2,290 | $300 | 13% | $541 | $1,750 | $421 | $0 | $210 | 2.0 | 0.6 | 30% | 71% | 4.24 |
| HI-E FURNACE | <300,000 Btuh | 80000 | 0.80 | 0.94 | 2.86 | 293 | $2,615 | $2,615 | $375 | 14% | $662 | $1,953 | $512 | $0 | $240 | 2.1 | 0.6 | 10% | 73% | 3.95 |
| Weighted Average | | | | | | 238 | $2,119 | $2,119 | $248 | 12% | $474 | $1,645 | $375 | $0 | $194 | 1.9 | 0.7 | 100% | 66% | 4.47 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009
(6) Ratio of Non-inc to Incentive Costs discounted 20% for 2008/09 program measures

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

## HIGH EFFICIENCY SPACE HEATING HOT WATER BOILER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 20 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.84210 |
| Ratio of Non-inc to Incentive Costs | 40.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Htg. Season Hrs.: | 2,460 |
| Htg. Season Load Factor: | 0.80 |
| Peak Day Load Factor: | 0.80 |

| RATE DATA | |
|---|---|
| $/Therm | $0.7727 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| Assume equal weights |

| DEMAND/ENERGY SAVINGS | | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Input (Btuh) | Output (Btuh) | Base Eff. | High Eff. | Peak Day Savgs. Per Unit (Therms) | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Space Heating HW Boiler <300 Mbtuh | 160,000 | 136,000 | 80% | 85% | 1.92 | 197 | $1,756 | $1,756 | $800 | 46% | $1,638 | $117 | $1,318 | $0 | $152 | 8.7 | 3.4 | 50% | 61% | 1.07 |
| HE Space Heating HW Boiler ≥ 300 Mbtuh | 750,000 | 637,500 | 80% | 85% | 9.00 | 922 | $8,229 | $8,229 | $1,500 | 18% | $2,687 | $5,542 | $2,087 | $0 | $713 | 2.9 | 0.8 | 50% | 72% | 3.06 |
| Weighted Average | | | | | | 560 | $4,992 | $4,992 | $1,150 | 32% | $2,163 | $2,830 | $1,703 | $0 | $432 | 5.8 | 2.1 | 100% | 68% | 2.31 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009
(6) Ratio of Non-inc to Incentive Costs discounted 20% for 2008/09 program measures

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

CONDENSING UNIT HEATER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 20 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.84210 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Htg. Season Hrs.: | 2,460 |
| Htg. Season Load Factor: | 0.80 |
| Peak Day Load Factor: | 0.80 |

| RATE DATA | |
|---|---|
| $/Therm | $0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| Assume equal weights for each model |

| DEMAND/ENERGY SAVINGS | | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Input (Btuh) | Heating Output Capacity (Btuh) | Base Eff. | High Eff. | Peak Day Savgs. Per Unit (Therms) | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback w/o Inc. (yrs) | Payback w/ Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Condensing Unit Heater | 131,000 | 121,830 | 0.83 | 0.93 | 3.03 | 311 | $2,771 | $2,771 | $400 | 14% | $837 | $1,934 | $637 | $0 | $254 | 2.5 | 0.9 | 25% | 63% | 3.31 |
| Condensing Unit Heater | 175,000 | 159,250 | 0.83 | 0.91 | 3.24 | 332 | $2,961 | $2,961 | $400 | 14% | $819 | $2,142 | $619 | $0 | $272 | 2.3 | 0.8 | 25% | 65% | 3.61 |
| Condensing Unit Heater | 260,000 | 239,200 | 0.83 | 0.92 | 5.41 | 555 | $4,949 | $4,949 | $400 | 8% | $774 | $4,176 | $574 | $0 | $454 | 1.3 | 0.4 | 25% | 70% | 6.40 |
| Condensing Unit Heater | 305,000 | 277,550 | 0.83 | 0.91 | 5.64 | 579 | $5,161 | $5,161 | $400 | 8% | $1,314 | $3,847 | $1,114 | $0 | $474 | 2.4 | 1.5 | 25% | 36% | 3.93 |
| Weighted Average | | | | | | 444 | $3,961 | $3,961 | $400 | 11% | $936 | $3,024 | $736 | $0 | $363 | 2.1 | 0.9 | 100% | 54% | 4.23 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life from ACEEE report http://www.aceee.org/pubs/a031full.pdf
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

EARLY RETIREMENT OF GRAVITY-VENTED UNIT HEATER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 20 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.84210 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Htg. Season Hrs.: | 2,460 |
| Htg. Season Load Factor: | 0.80 |
| Peak Day Load Factor: | 0.80 |

| RATE DATA | |
|---|---|
| $/Therm | $0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | RET |
| Cost Basis: | Installed Cost |

| Weighting Factors |
|---|
| Assume equal weights for each model |

| DEMAND/ENERGY SAVINGS | | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Input (Btuh) | Heating Output Capacity (Btuh) | Base Eff. | High Eff. | Peak Day Savgs. Per Unit (Therms) | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Power Vented Unit Heater | 150,000 | 124,500 | 0.63 | 0.83 | 9.14 | 937 | $8,360 | $8,360 | $2,000 | 24% | $3,451 | $4,909 | $2,451 | $0 | $767 | 3.2 | 0.6 | 25% | 82% | 2.42 |
| Power Vented Unit Heater | 200,000 | 166,000 | 0.63 | 0.83 | 12.19 | 1,249 | $11,147 | $11,147 | $2,000 | 18% | $3,724 | $7,422 | $2,724 | $0 | $1,023 | 2.7 | 0.7 | 25% | 73% | 2.99 |
| Power Vented Unit Heater | 300,000 | 249,000 | 0.63 | 0.83 | 18.29 | 1,874 | $16,720 | $16,720 | $2,000 | 12% | $4,396 | $12,323 | $3,396 | $0 | $1,534 | 2.2 | 0.9 | 25% | 59% | 3.80 |
| Power Vented Unit Heater | 350,000 | 290,500 | 0.63 | 0.83 | 21.33 | 2,187 | $19,506 | $19,506 | $2,000 | 10% | $4,712 | $14,794 | $3,712 | $0 | $1,790 | 2.1 | 1.0 | 25% | 54% | 4.14 |
| *Weighted Average* | | | | | | 1,562 | $13,933 | $13,933 | $2,000 | 16% | $4,071 | $9,862 | $3,071 | $0 | $1,279 | 2.5 | 0.8 | 100% | 65% | 3.42 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure life and base measure efficiency from ACEEE report http://www.aceee.org/pubs/a031full.pdf
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I and RESIDENTIAL PROGRAMS** HIGH EFFICIENCY SERVICE HOT WATER HEATER ≤ 75,000 BTUh

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 13 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $ 0.74855 |
| Ratio of Non-inc to Incentive Costs | 40.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA Commercial |
|---|
| Based on light/moderate users |

| OPERATING DATA Residential |
|---|
| Energy consumption estimated using the DOE test procedure. Based on the following formula: (41,045 BTU/EF x 365)/100,000 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors | units |
|---|---|
| Commercial | 25% |
| Residential | 75% |

| RATE DATA | |
|---|---|
| $/Therm | $ 0.8541 |

| DEMAND/ENERGY SAVINGS | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base EF | Measure EF | Annual Savings (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Combined Commercial-Residential Water Heater Program | 0.594 | 0.620 | 14.3 | $89 | $89 | $50 | 56% | $94 | -$5 | $74 | $0 | $12 | 6.1 | 2.0 | 100% | 68% | 0.95 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009
(6) Ratio of Non-inc to Incentive Costs *discounted 20% for 2008/09 program measures*

# C&I Facilities Gas Efficiency Program

UNSG C&I PROGRAM

HIGH EFFICIENCY SERVICE HOT WATER HEATER OVER 75000 Btuh

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 15 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.77787 |
| Ratio of Non-inc to Incentive Costs | 40.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | Size, Mbtu/h | Temp Rise | Days/yr | Annual Avg Gals/day |
|---|---|---|---|---|
| Food Service | 400 | 80 | 365 | 2,448 |
| School | 200 | 80 | 200 | 789 |
| Office | 150 | 80 | 250 | 274 |

| RATE DATA | |
|---|---|
| $/Therm | $ 0.7267 |

| Weighting Factors | |
|---|---|
| Food Service (high use) | 50% |
| School (medium use) | 25% |
| Office (low use) | 25% |
| Eff =90% | 100% |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent. | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Facility | Input (Mbtu/h) | Base Eff. | Min Qual High Eff. | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Storage Water Heater >75,000 Btu/h | Food Service | 400 | 80% | 90% | 827 | $5,856 | $5,856 | $2,000 | 34% | $5,464 | $392 | $4,664 | $0 | $601 | 7.8 | 4.4 | 50.0% | 43% | 1.07 |
| Storage Water Heater >75,000 Btu/h | School | 200 | 80% | 90% | 266 | $1,887 | $1,887 | $1,000 | 53% | $1,992 | -$105 | $1,592 | $0 | $194 | 8.2 | 3.1 | 25.0% | 63% | 0.95 |
| Storage Water Heater >75,000 Btu/h | Office | 150 | 80% | 90% | 93 | $658 | $658 | $750 | 114% | $1,716 | -$1,058 | $1,416 | $0 | $67 | 21.0 | 9.9 | 25.0% | 53% | 0.38 |
| Weighted Average | | | | | 503 | $3,564 | $3,564 | $1,438 | 59% | $3,659 | -$95 | $3,084 | $0 | $366 | 11.2 | 5.4 | 100.0% | 47% | 0.97 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009
(6) Ratio of Non-inc to Incentive Costs discounted 20% for 2008/09 program measures

# C&I Facilities Gas Efficiency Program

**UNSG C&I AND RESIDENTIAL PROGRAMS**

HIGH EFFICIENCY GAS POOL AND SPA HEATER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 5 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.62147 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Outdoor Pool Season | May 1 through August 31 |
| Basis (<500 kBtuh): 400 kBtuh heater, 1,000 sf pool | |
| Basis (>500 kBtuh): 2,000 kBtuh heater, 5,000 sf pool | |

| RATE DATA | |
|---|---|
| $/Therm | $ 0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Common Unit (Sq Ft) | Base Usage Common Unit (Therms/yr) | Base Eff. | High Eff. | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback w/o Inc. (yrs) | Payback w/ Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Pool and Spa Heater (<500 kBtuh) | 1,000 | 4,266 | 83.0% | 86.0% | 149 | $379 | $379 | $150 | 40% | $286 | $93 | $211 | $0 | $122 | 1.7 | 0.5 | 100% | 71% | 1.33 |
| HE Pool and Spa Heater (>500 kBtuh) | 1,000 | 4,266 | 82.0% | 89.3% | 349 | $889 | $889 | $800 | 90% | $3,169 | -$2,280 | $2,769 | $0 | $285 | 9.7 | 6.9 | 100% | 29% | 0.28 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life from DEER 2008
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH EFFICIENCY CLOTHES WASHER CEE TIER 1 OR BETTER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 11 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $ 0.71406 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | Loads/yr |
|---|---|
| Multifamily use 3 loads loads per d | 1,095 |
| Commercial laundering 6 loads pe | 2,190 |

| RATE DATA | |
|---|---|
| $/Therm | $ 0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Water HT Base Usage (Therms/load) | Water HT Measure (Therms/load) | Dryer Savings Measure (Therms/load) | Average Loads per year | Annual Savgs. Per Unit (Therms) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Commercial/Multifamily Clothes washer CEE Tier 1 | 0.075 | 0.053 | 0.018 | 1,643 | 66 | $355 | $355 | $100 | 28% | $196 | $159 | $146 | $0 | $54 | 2.7 | 0.8 | 100% | 68% | 1.81 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(3) See worksheet 'Cost Assumptions' for information of cost data.
(4) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY GRIDDLE

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 40.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 hr/day, 365 d/yr, 100 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback w/o Inc. (yrs) | Payback w/ Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| High Eff Griddle | 30% | 1155 | 38% | 1060 | 95 | $552 | $552 | $300 | 54% | $602 | -$50 | $482 | $0 | $69 | 7.0 | 2.6 | 1.00 | 62% | 0.92 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009
(6) Ratio of Non-inc to Incentive Costs discounted 20% for 2008/09 program measures

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY COMBINATION OVEN

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 hr/day, 365 d/yr, 200 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Combination Oven | 35% | 1532 | 40% | 1129 | 403 | $2,343 | $2,343 | $1,000 | 43% | $2,019 | $324 | $1,519 | $0 | $293 | 5.2 | 1.8 | 1.00 | 66% | 1.16 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY CONVECTION OVEN

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 100 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Measure Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Convection Oven | 30.0% | 1052 | 40.0% | 728 | 324 | $1,884 | $1,884 | $1,000 | 53% | $1,965 | -$81 | $1,465 | $0 | $235 | 6.2 | 2.0 | 1.00 | 68% | 0.96 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY CONVEYOR OVEN

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 100 lbs/day, 300 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors | |
|---|---|
| Under 25 inch width | 50% |
| Over 25 inch width | 50% |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback w/o Inc. (yrs) | Payback w/ Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Conveyor Oven <25" | 20% | 2029 | 42% | 1294 | 735 | $4,274 | $4,274 | $400 | 9% | $761 | $3,513 | $561 | $0 | $534 | 1.0 | 0.3 | 50% | 71% | 5.62 |
| HE Conveyor Oven >25" | 20% | 3512 | 42% | 2667 | 845 | $4,913 | $4,913 | $900 | 18% | $1,697 | $3,217 | $1,247 | $0 | $614 | 2.0 | 0.6 | 50% | 72% | 2.90 |
| Weighted Average | | | | | 790 | $4,594 | $4,594 | $650 | 14% | $1,229 | $3,365 | $904 | $0 | $574 | 1.5 | 0.4 | 100% | 72% | 3.74 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY RACK OVEN

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 1200 lbs/day per oven |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors | |
|---|---|
| Single Oven | 50% |
| Double Oven | 50% |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE Rack Oven - Single | 35% | 5425 | 50% | 3312 | 2113 | $12,286 | $12,286 | $1,000 | 8% | $1,961 | $10,325 | $1,461 | $0 | $1,536 | 1.0 | 0.3 | 50% | 68% | 6.27 |
| HE Rack Oven - Double | 35% | 10850 | 50% | 6624 | 4226 | $24,573 | $24,573 | $1,000 | 4% | $2,557 | $22,016 | $2,057 | $0 | $3,071 | 0.7 | 0.3 | 50% | 49% | 9.61 |
| Weighted Average | | | | | 3,170 | $18,430 | $18,430 | $1,000 | 6% | $2,259 | $16,171 | $1,759 | $0 | $2,303 | 0.8 | 0.3 | 100% | 57% | 8.16 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY FRYER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 100 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| High Eff Fryer | 35% | 1168 | 50% | 808 | 360 | $2,093 | $2,093 | $900 | 43% | $1,691 | $403 | $1,241 | $0 | $262 | 4.7 | 1.3 | 1.00 | 73% | 1.24 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY LARGE VAT FRYER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $ 0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 150 lbs/day |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Hi Eff Large Vat Fryer | 35% | 1567 | 50% | 1139 | 428 | $2,489 | $2,489 | $900 | 36% | $1,698 | $791 | $1,248 | $0 | $311 | 4.0 | 1.1 | 1.00 | 72% | 1.47 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

**UNSG C&I PROGRAM**

HIGH-EFFICIENCY ENERGY STAR STEAM COOKER

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 12 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.73208 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA |
|---|
| 12 h/day, 365 d/yr, 100 lbs/day, 3 pans |

| RATE DATA | |
|---|---|
| $/Therm | $0.7267 |

| OTHER FACTORS | |
|---|---|
| Application | ROB |
| Cost Basis: | Incremental equipment |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | | | | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Base Eff. | Base Model Annual Energy Use (Therms/yr) | Min Qual Eff. | Measure Annual Energy Use (Therms/yr) | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Incr. Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| HE ENERGY STAR Steam Cooker | 15% | 2035 | 38% | 381 | 1654 | $9,617 | $9,617 | $1,750 | 18% | $3,497 | $6,120 | $2,622 | $0 | $1,202 | 2.2 | 0.7 | 1.00 | 67% | 2.75 |

(1) See Energy Analysis Assumptions tab for energy calculation parameters
(2) Measure Life based on DEER 2008 Data
(3) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab
(4) See worksheet 'Cost Assumptions' for information of cost data.
(5) NTG Ratio and discount rate based on ACC guidance 2/20/2009

# C&I Facilities Gas Efficiency Program

**UNSG C&I PROGRAM**

LOW FLOW PRE-RINSE SPRAY VALVE

| PROGRAM DATA | |
|---|---|
| Measure Life (yrs): | 5 |
| Program Life (yrs): | 5 |
| Levelized $/Therms | $0.62147 |
| Ratio of Non-inc to Incentive Costs | 50.0% |
| IRP Discount Rate: | 7.00% |
| Social Discount Rate | 7.00% |
| NTG Ratio: | 100% |

| OPERATING DATA | |
|---|---|
| Gross savings per installed valve (th | 42.0 |

| RATE DATA | |
|---|---|
| $/Therm | $0.8187 |

| OTHER FACTORS | |
|---|---|
| Application | RET |
| Cost Basis: | Total Installed Cost |

| Weighting Factors |
|---|
| None Applied |

| DEMAND/ENERGY SAVINGS | | INCENTIVE CALCULATIONS | | | | | | CUSTOMER COST/SAVINGS | | | | | WGT. | % Incent | TRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measure Type | Annual Savgs. Per Unit (Therms/Unit) | IRP PV Benefit ($/Unit) | Social PV Benefit ($/Unit) | Recommended Incentive ($/Unit) | Recommended Incentive % PV | PV Program Cost ($/Unit) | NPV ($/Unit) | Installed Cost ($/Unit) | Tax Credits and Other Incentives ($/Unit) | Cost Savings ($/Unit) | Payback wo/Inc. (yrs) | Payback w/Inc. (yrs) | Weighting Factor | (%) | BC Ratio |
| Low-Flow Pre Rinse Spray Valve | 42 | $107 | $107 | $50 | 47% | $97 | $10 | $72 | $0 | $34 | 2.1 | 0.7 | 100% | 69% | 1.10 |

(1) Impacts, Costs, and Measure Life from: *IMPACT AND PROCESS EVALUATION FINAL REPORT for CALIFORNIA URBAN WATER CONSERVATION COUNCIL 2004-5 PRE-RINSE SPRAY VALVE INSTALLATION PROGRAM (PHASE 2)* CALMAC Study ID CUW0001.01, February 21, 2007

(2) References for Base and Measure Efficiencies provided in Energy Analysis Assumptions tab

(3) See worksheet 'Cost Assumptions' for information of cost data.

(4) NTG Ratio and discount rate based on ACC guidance 2/20/2009