

# BUSINESS SOLUTIONS

## 2010 PROGRAM APPLICATION

### Follow This Easy Process:

#### 1 Eligibility

Qualified measures installed at facilities served by Consumers Energy. Projects must result in an improvement in energy efficiency. Equipment must meet the specifications as explained in the application.

#### 2 Incentive Reservations (Pre-notification Applications)

E-mail, mail or fax a completed copy of the application, including the Incentive Application Checklist. Pre-notification applications are strongly encouraged for all projects and are required for specific measures as well as all custom projects. Please include all required documentation including equipment model number and manufacturer specification sheets.

#### 3 Installation

Install eligible project, and collect all required documentation for submittal.

#### 4 Project Completion (Final Applications)

E-mail, mail or fax a signed and completed copy of the application and all required documentation including installed equipment specifications, itemized invoices and, for custom projects, final calculation of energy savings. Calculate your total incentives per measure using the attached forms.

If you are viewing this document in Microsoft Excel, please note that each section of the application is accessible through the tabs at the bottom of the Excel window.

### Send applications to:

#### E-mail

[ConsumersEnergyBusinessSolutions@kema.com](mailto:ConsumersEnergyBusinessSolutions@kema.com)

#### Mail

Consumers Energy Business Solutions  
P.O. Box 1040  
Okemos, MI 48805

**If you need assistance, please contact our program hotline:**

**1-877-607-0737**

#### Fax

1-877-607-0738

**Please visit our Web site:**

[www.consumersenergy.com](http://www.consumersenergy.com)

## 2010 PROGRAM GUIDELINES

Consumers Energy is offering a comprehensive set of incentives under the Business Solutions Program to facilitate the implementation of cost-effective energy efficiency improvements for business customers.

The program incentive funds are limited. Final Applications for the current program year should be received by Nov. 30, 2010 to qualify for payment in the 2010 program year.

### Program and Project Eligibility

The program offers business customers both prescriptive incentives for common energy efficiency measures and custom incentives for other eligible energy efficiency improvements.

The amount of incentives a facility or customer can receive is limited. A facility is defined as contiguous property for which a single customer is responsible for paying the Consumers Energy electricity and/or natural gas bill.

### Program Year Incentive Limits

|  |  |
|--|--|
| Prescriptive Incentives                        | \$100,000 per facility   |
| Custom Incentives                              | 100 percent of the calculated incentive up to \$100,000<br>50 percent of the calculated incentive above \$100,000<br>Maximum \$200,000 custom incentive per facility |
| Customer Incentive Limit                       | \$500,000 across all facilities per customer   |
| Large Gas Customers<br>( >100,000MCF/yr usage) | \$25,000 per customer  |

### Pre-notification Application Process

Pre-notification Applications are strongly encouraged for all projects. Pre-notification is required for permanent lamp removal, new T5/T8 fixtures, and all custom measures. The Consumers Energy team will review project eligibility and reserve program funds. A reservation does not guarantee an incentive. Incentives will be calculated based on the Final Application. Project funds will be reserved for 90 days. Notify us if your project will take longer than 90 days at Pre-notification submittal.

### Final Application Review Process

Final Applications must be submitted within 60 days of project completion.

Final Applications must include project documentation, such as copies of dated invoices for the purchase and installation of the measures and/or product specification sheets. The project invoice should provide sufficient detail to separate the project cost from the cost of other services such as repairs and building code compliance, as well as show the location where the measures were installed. Consumers Energy reserves the right to request additional supporting documentation as deemed necessary to ensure measure eligibility and verify the expected energy savings will occur. Requested information could include: equipment purchase dates, installation dates, proof that the equipment is operational, manufacturer specifications, warranty information, and proof of customer co-payment. Applicants are encouraged to call the program hotline if they have any questions about documentation requirements. All customer information will be held in confidence.

Once all project information is received, the team will confirm that the project meets the program requirements, perform necessary inspections and/or perform technical reviews. The program team will send incentive checks four to six weeks after project approval.

### Inspections

Consumers Energy reserves the right to inspect all projects to verify compliance with the program rules and verify the accuracy of project documentation. This may include pre-installation and/or post-installation inspections, detailed lighting layout descriptions, metering, data collection, and interviews.

## 2010 INCENTIVE APPLICATION CHECKLIST

| PRE NOTIFICATION APPLICATION  |
|---|
| <p><b>Required Attachment</b></p> <p><input type="checkbox"/> Customer/Contractor Information</p> <p><input type="checkbox"/> Original Equipment Manufacturer's Specifications<br/>(Required for custom projects )</p> <p><b>Incentives Worksheets</b></p> <p><input type="checkbox"/> Lighting</p> <p><input type="checkbox"/> HVAC (Electric)</p> <p><input type="checkbox"/> Gas</p> <p><input type="checkbox"/> Motors and Drives</p> <p><input type="checkbox"/> Miscellaneous Electric</p> <p><input type="checkbox"/> Custom</p> |
| <p><b>Application Date:</b> _____</p>   |
| <p><b>Expected Completion Date*:</b> _____</p>  |
| <p><i>*Project funds will only be reserved for 90 days from date of Pre-notification.</i></p>   |

| FINAL APPLICATION   |
|---|
| <p><b>Required Attachments</b></p> <p><input type="checkbox"/> Customer/Contractor Information</p> <p><input type="checkbox"/> Signed Final Application Agreement</p> <p><input type="checkbox"/> Original Equipment Manufacturer's Specification</p> <p><input type="checkbox"/> Itemized Invoices with Equipment Model Numbers</p> <p><b>Incentives Worksheets</b></p> <p><input type="checkbox"/> Lighting</p> <p><input type="checkbox"/> HVAC (Electric)</p> <p><input type="checkbox"/> Gas</p> <p><input type="checkbox"/> Motors and Drives</p> <p><input type="checkbox"/> Miscellaneous Electric</p> <p><input type="checkbox"/> Custom</p> |
| <p><b>Application Date:</b> _____</p>   |

| FOR FINAL APPLICATION ONLY |                  |
|----------------------------|------------------|
| MEASURE CATEGORY           | INCENTIVE AMOUNT |
| LIGHTING                   |                  |
| HVAC (ELECTRIC)            |                  |
| GAS (HVAC, WATER HEATING)  |                  |
| MOTORS & DRIVES            |                  |
| MISCELLANEOUS ELECTRIC     |                  |
| CUSTOM                     |                  |
| TOTAL INCENTIVES           |                  |

*Total prescriptive incentives cannot exceed the project cost. Custom incentives cannot exceed 50 percent of the total project cost.*

### Consumers Energy Business Solutions

P.O. Box 1040  
Okemos, MI 48805

Tel: 1-877-607-0737  
Fax: 1-877-607-0738

[ConsumersEnergyBusinessSolutions@kema.com](mailto:ConsumersEnergyBusinessSolutions@kema.com)  
[www.consumersenergy.com](http://www.consumersenergy.com)

## 2010 INCENTIVE APPLICATION

**Important:** Please read the terms and conditions before signing and submitting this application.  
You must complete all information and provide required additional documentation to avoid processing delays.

### CUSTOMER INFORMATION

**PRIMARY BUSINESS TYPE** *(select one)*

- OFFICE
- SCHOOL (K-12)
- COLLEGE/UNIVERSITY
- RETAIL/SERVICE
- RESTAURANT
- HOTEL/MOTEL

- MEDICAL
- GROCERY
- WAREHOUSE
- LIGHT INDUSTRY
- HEAVY INDUSTRY
- MISCELLANEOUS

**Tax Status** *(as entered on W9)*

- Corporation (Inc., PC, Etc.)
- Tax Exempt
- Individual
- Other (may receive 1099)  \_\_\_\_\_  
(describe other)

**Natural gas provider**

- Consumers Energy
- DTE Energy
- \_\_\_\_\_  
(Other)

**Electricity provider**

- Consumers Energy
- DTE Energy
- \_\_\_\_\_  
(Other)

**Project Type**

- Existing Building
- New Construction
- Major Renovation

NAME OF APPLICANT'S BUSINESS \_\_\_\_\_

PROJECT NAME (IF APPLICABLE) \_\_\_\_\_

CONSUMERS ENERGY CONTRACT ACCOUNT # (where measure is installed) \_\_\_\_\_ TAXPAYER ID # (SSN/FEIN) \_\_\_\_\_

NAME AS IT APPEARS ON CONSUMERS ENERGY BILL \_\_\_\_\_

NAME OF CONTACT PERSON \_\_\_\_\_ TITLE OF CONTACT PERSON \_\_\_\_\_

CONTACT PHONE # \_\_\_\_\_ CONTACT FAX # \_\_\_\_\_ CONTACT E-MAIL ADDRESS \_\_\_\_\_

INSTALLATION ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

### CONTRACTOR INFORMATION

NAME OF CONTRACTING COMPANY \_\_\_\_\_

NAME OF CONTACT PERSON \_\_\_\_\_ TITLE OF CONTACT PERSON \_\_\_\_\_

CONTACT PHONE # \_\_\_\_\_ CONTACT FAX # \_\_\_\_\_ CONTACT E-MAIL ADDRESS \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

## 2010 FINAL APPLICATION AGREEMENT

As an eligible Consumers Energy Customer, I certify the indicated energy efficiency measures were installed in 2010. The energy optimization measures are installed in a qualifying facility and not for resale. Additional program terms and conditions may be found in the Policy and Procedures Manual available at [www.consumersenergy.com](http://www.consumersenergy.com).

I understand that in the event the application received a reservation, that reservation is not a guarantee of payment. Incentive payment will be based upon the Final Application meeting the program terms and conditions.

Selected terms and conditions include, but are not limited to:

- Final Applications and all required documentation must be received within 60 days of project completion.
- The program has a limited budget, but is a multiyear program. Applications will be processed until allocated funds are reserved or spent each program year.
- All equipment must be purchased and installed prior to submitting the Final Application.
- Applicant agrees to inspection and measurement activities by the utility or its representatives of both project payment and equipment installation for up to five years.
- Incentives may be taxable and the Applicant is solely responsible for the payment of any resulting taxes. Incentives will be reported to the IRS, unless applicant is exempt.
- The Applicant may be required to refund some or all of the incentives if the measures do not remain (or were not) installed for a period of five (5) years or the end of the product life, whichever is less.
- All materials removed, including lamps and PCB ballasts, must be taken out of service permanently and disposed of in accordance with local, state, and federal codes and ordinances. The Applicant is responsible for being aware of any applicable codes or ordinances. Information about hazardous waste disposal may be found at: [www.epa.gov/osw/hazwaste.htm](http://www.epa.gov/osw/hazwaste.htm).
- For certain measures, the incentive amount will be determined based on the estimated energy savings. The Applicant may be required to provide documentation on energy savings calculations and assumptions. Consumers Energy will make the final determination of the energy savings and thus the incentive amount to be paid.
- Consumers Energy has no obligations regarding and does not endorse or guarantee any claims, promises, work, or equipment made, performed, or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures.

I have read and understand the program requirements and Measure Specifications and Program Guidelines set forth in this application and the program Policy and Procedures Manual and agree to abide by those requirements. Furthermore, I concur that I must meet all eligibility criteria in order to be paid under this program and not receive incentives from any other utility for the same project.

I certify that the information on this application is true and accurate. By submitting this application, I authorize Consumers Energy and its consultants to utilize my account information and project data. I understand this information is confidential and will only be used to evaluate my application for compliance with the program Policy and Procedures Manual.

## 2010 FINAL APPLICATION AGREEMENT

| INCENTIVES REQUESTED |                            |                        |
|----------------------|----------------------------|------------------------|
| TOTAL PROJECT COST   | TOTAL INCENTIVES REQUESTED |                        |
| CUSTOMER SIGNATURE   |                            |                        |
| PRINT NAME           | DATE                       | ACTUAL COMPLETION DATE |

**FOR FINAL APPLICATIONS, SIGN AND SUBMIT ONLY AFTER ALL EQUIPMENT HAS BEEN INSTALLED.  
A CUSTOMER SIGNATURE IS REQUIRED FOR PAYMENT.**

| PAYMENT RELEASE AUTHORIZATION (OPTIONAL)   |   |      |
|--|---|------|
| <i>Complete this section ONLY if incentive payment is to be paid to an entity other than the Customer.</i>   |   |      |
| I am authorizing the payment of the incentive to the third party named below, and I understand that I will not be receiving the incentive payment. I also understand that my release of the payment to a third party does not exempt me from the program requirements outlined in the Measure Specifications, Final Application Agreement, and Terms & Conditions. |   |      |
| <b>Authorized by:</b>  |   |      |
| CUSTOMER SIGNATURE   | PRINT NAME  | DATE |
| <b>Check should be made payable to:</b>  |   |      |
| PAYEE: COMPANY/INDIVIDUAL NAME   |   |      |
| MAILING ADDRESS  |   |      |
| CITY   | STATE   | ZIP  |
| CONTACT PHONE NUMBER   |   |      |
| TAXPAYER ID # (SSN/FEIN OF PAYEE)  | TAX STATUS - Corporation (Inc., PC, Etc.), Tax Exempt, Individual, Other (May receive 1099) |      |

## 2010 LIGHTING RETROFIT INCENTIVES WORKSHEET

| Equipment Type  | Incentive | Unit                | # of Units | Incentive Calculated |
|---|-----------|---------------------|------------|----------------------|
| <b>Compact Fluorescents - ENERGY STAR<sup>®</sup> qualified</b>   |           |                     |            |                      |
| CFL - Screw In (30 watts or less)   | \$1.50    | Lamp                |            |                      |
| CFL - Screw In (31 watts to 115 watts)  | \$8.00    | Lamp                |            |                      |
| CFL - Downlight, Dimmable or 3-way  | \$8.00    | Lamp                |            |                      |
| Compact Fluorescent Fixture   | \$22.00   | Fixture             |            |                      |
| <b>LED Lighting - ENERGY STAR qualified</b>   |           |                     |            |                      |
| LED Recessed Down Light   | \$20.00   | Fixture             |            |                      |
| <b>Standard Linear Fluorescent Retrofit</b>   |           |                     |            |                      |
| 2-foot T12 to T8 or T5 (with ballast)   | \$3.00    | Lamp                |            |                      |
| 3-foot T12 to T8 or T5 (with ballast)   | \$3.00    | Lamp                |            |                      |
| 4-foot T12 to T8 or T5 (with ballast) - <b>Includes U Lamps</b>   | \$4.00    | Lamp                |            |                      |
| 8-foot T12 to T8 or T5 (with ballast)   | \$5.00    | Lamp                |            |                      |
| <b>High Performance (HP) and Reduced Wattage (RW) Linear Fluorescent Retrofit</b>                                       |           |                     |            |                      |
| 4-foot T12 to HP or RW T8 (with ballast)  | \$6.00    | Lamp                |            |                      |
| 4-foot Standard T8 to Reduced Wattage T8 (lamp only)  | \$0.75    | Lamp                |            |                      |
| <b>Permanent Lamp Removal* - Pre-notification Application Required</b>  |           |                     |            |                      |
| T12 2 ft Lamp Removal (combined with T8/ballast retrofit)   | \$4.00    | Lamp removed        |            |                      |
| T12 3ft Lamp Removal (combined with T8/ballast retrofit)  | \$4.00    | Lamp removed        |            |                      |
| T12 4ft Lamp Removal (combined with T8/ballast retrofit)  | \$5.00    | Lamp removed        |            |                      |
| T12 8ft Lamp Removal (combined with T8/ballast retrofit)  | \$10.00   | Lamp removed        |            |                      |
| <b>Exit Signs, Retrofit or Replacement - ≤ 5 Watt or ENERGY STAR qualified</b>  |           |                     |            |                      |
| LED, T-1, or Electroluminescent Exit Signs  | \$12.50   | Fixture             |            |                      |
| <b>Traffic Signals</b>  |           |                     |            |                      |
| LED Traffic Signal  | \$25.00   | Signal              |            |                      |
| LED Pedestrian Signal   | \$25.00   | Signal              |            |                      |
| <b>Controls</b>   |           |                     |            |                      |
| Lighting Occupancy Sensors  | \$0.09    | per watt controlled |            |                      |
| Central Lighting Controls   | \$0.06    | Square foot         |            |                      |
| Switching Controls for Multilevel Lighting  | \$0.06    | Square foot         |            |                      |
| Daylight Sensor Controls  | \$0.09    | Square foot         |            |                      |
| Exterior Lighting Bi-level Control w/ Override 150W to 1000W HID  | \$100.00  | Fixture             |            |                      |
| <b>Exterior High-intensity Discharge (HID) Conversion</b>   |           |                     |            |                      |
| LED or Induction replacing ≤175W HID  | \$45.00   | Fixture             |            |                      |
| LED or Induction replacing 176W to 250W HID   | \$65.00   | Fixture             |            |                      |
| LED or Induction replacing 251W to 400W HID   | \$120.00  | Fixture             |            |                      |
| <b>Garage High-intensity Discharge (HID) Conversion</b>   |           |                     |            |                      |
| LED or Induction replacing ≤175W HID  | \$100.00  | Fixture             |            |                      |
| LED or Induction replacing 176W to 250W HID   | \$150.00  | Fixture             |            |                      |
| LED or Induction replacing 251W to 400W HID   | \$180.00  | Fixture             |            |                      |
| <b>T8/T5 New Fluorescent Fixtures (Includes HID to Fluorescent conversions)*- Pre-notification Application Required</b> |           |                     |            |                      |
| Provide Fixture Details<br>(quantity and fixture wattages for both new and replaced fixtures)                           | \$0.35    | Watts Reduced       |            |                      |
|   |           |                     |            |                      |
| <b>Total Lighting Incentives:</b>   |           |                     |            |                      |

All lighting projects are expected to comply with the Illuminating Engineering Society of North America (IESNA) recommended lighting levels or the local code.  
Note: PCB ballasts and certain lamps are hazardous materials and should be disposed of properly.

\* Pre-notification Application is required

## 2010 LIGHTING SPECIFICATIONS

All lighting projects are expected to comply with the Illuminating Engineering Society of North America (IESNA) recommended lighting levels or the local code.

### Compact Fluorescent Lamps, Screw In (≤ 30 Watts)

Screw in CFLs must be ENERGY STAR® rated lamps or meet ENERGY STAR criteria. The lamps must have ≥ 50 lumens per watt (LPW). Note: This incentive is not available for CFLs discounted by any utility company and purchased at retail stores participating in the CFL discount program. Incentives for CFLs purchased from those retailers are included in the discounted price. (Discounted CFLs are identified at point of purchase)

### Compact Fluorescent Lamps, Screw In (31 Watts - 115 Watts)

High wattage CFLs must replace existing incandescent lamps. The lamp should have a minimum luminous efficacy of 65 lumens per watt (LPW). Note: This incentive is not available for CFLs discounted by any utility company and purchased at retail stores participating in the CFL discount program. Incentives for CFLs purchased from those retailers are included in the discounted price. (Discounted CFLs are identified at point of purchase)

### Compact Fluorescent Fixtures

Incentives are available for interior hardwired compact fluorescent fixtures. Only complete new fixtures or modular hardwired retrofits with hardwired electronic ballasts qualify. The compact fluorescent ballast must be programmed start or programmed rapid start with a power factor (PF) ≥ 90 and a total harmonic distortion (THD) ≤ 20 percent.

### Standard Linear Fluorescent Retrofit

Incentives are available for replacing existing T12 lamps and magnetic ballasts with T8 or T5 lamps and electronic ballasts. The new fixture lamps must have a color rendering index (CRI) ≥ 80. The electronic ballast must be high frequency (≥20 kHz), UL listed, and warranted against defects for a minimum of five years. Ballasts must have a power factor (PF) ≥ 0.90. Ballasts for 4-foot lamps must have total harmonic discharge (THD) ≤ 20 percent at full power output. For 2-foot and 3-foot lamps, ballasts must have THD ≤ 32 percent at full light output. A manufacturer's specification sheet must accompany the application.

### ENERGY STAR Qualified LED Recessed Down Light

LED recessed downlights must be ENERGY STAR qualified. They must have a minimum efficacy of 35 lumens per watt.

### High Performance 4-foot T8 Lamp and Ballast

Incentives are available for replacing existing T12 lamps and magnetic ballasts with high performance T8 lamps and electronic ballasts. This measure is based on the Consortium for Energy Efficiency (CEE) high performance T8 specification ([www.cee1.org](http://www.cee1.org)) and is summarized in Table 1 below. A list of qualified lamps and ballasts may be found at: <http://www.cee1.org/com/com-lt/com-lt-main.php3>. Both the lamp and ballast must meet the specification in order to qualify for an incentive. A manufacturer's specification sheet must accompany the application.

Table 1: High Performance T8 Specifications

| High Performance T8 and T5 Characteristics                                |   |                          |                      |                |
|---|---|--------------------------|----------------------|----------------|
| Mean System Efficiency  | ≥ 90 Mean Lumens per Watt (MLPW) for Instant Start Ballasts |                          |                      |                |
|   | ≥ 88 MLPW for Programmed Rapid Start Ballasts               |                          |                      |                |
| Performance Characteristics for Lamps                                     |   |                          |                      |                |
| Color Rendering Index (CRI)   | ≥ 80  |                          |                      |                |
| Minimum Initial Lamp Lumens   | ≥ 3100 Lumens *   |                          |                      |                |
| Lamp Life   | ≥ 24,000 Hours  |                          |                      |                |
| Lumen Maintenance or Minimum Mean Lumens                                  | ≥ 94% or<br>≥ 2900 Mean Lumens                              |                          |                      |                |
| Performance Characteristics for Ballasts                                  |   |                          |                      |                |
| Ballast Efficiency Factor (BEF)<br><br>BEF = (BFx100)/Ballast Input Watts | Instant Start Ballast (BEF)                                 |                          |                      |                |
|   | Lamps   | Low BF ≤ 0.85            | Norm 0.85 < BF ≤ 1.0 | High BF ≥ 1.01 |
|   | 1   | > 3.08                   | > 3.11               | NA             |
|   | 2   | > 1.60                   | > 1.58               | > 1.55         |
|   | 3   | ≥ 1.04                   | ≥ 1.05               | ≥ 1.04         |
|   | 4   | ≥ 0.79                   | ≥ 0.80               | ≥ 0.77         |
|   | Programmed Rapid Start Ballast (BEF)                        |                          |                      |                |
|   | 1   | ≥ 2.84                   | ≥ 2.84               | NA             |
|   | 2   | ≥ 1.48                   | ≥ 1.47               | ≥ 1.51         |
|   | 3   | ≥ 0.97                   | ≥ 1.00               | ≥ 1.00         |
|   | 4   | ≥ 0.76                   | ≥ 0.75               | ≥ 0.75         |
|   | Ballast Frequency   | 20 to 33 kHz or ≥ 40 kHz |                      |                |
| Power Factor  | ≥ 0.90  |                          |                      |                |
| Total Harmonic Distortion   | ≤ 20%   |                          |                      |                |

\* For lamp with color temperatures ≥ 4500k. 2950 minimum initial lamp lumens are allowed.

### Reduced Wattage 4-foot T8 Lamp and Ballast

Incentives are available for replacing T12 systems with reduced wattage lamp and electronic ballast systems. The lamps and ballasts must meet the Consortium for Energy Efficiency (CEE) specification ([www.cee1.org](http://www.cee1.org)) and summarized in the table below. Qualified lamps and ballast products may be found at <http://www.cee1.org/com/com-lt/com-lt-main.php3>. Both the lamp and ballast must qualify in order to receive an incentive for the system. A manufacturer's specification sheet must accompany the application.

### Reduced Wattage 4-foot T8 Lamps (Lamps Only)

Incentives are available when replacing 32 Watt T8 lamps with reduced wattage T8 lamps when an electronic ballast is already present. The lamps must be reduced wattage in accordance with the Consortium for Energy Efficiency (CEE) specification ([www.cee1.org](http://www.cee1.org)) and summarized in Table 2 below. Qualified product may be found at <http://www.cee1.org/com/com-lt/com-lt-main.php3>. The nominal wattage must be 28W (≥ 2585 Initial Lumens) or 25W (≥ 2400 Initial Lumens) to qualify.

2010 Lighting Specifications, Continued

Table 2: Reduced Wattage 4-foot Lamps and Ballasts

| Performance Characteristics for Lamps(1)                  |                                       |                |
|---|---------------------------------------|----------------|
| Mean System Efficacy                                      | ≥ 90 MLPW                             |                |
| Color Rendering Index (CRI)                               | ≥ 80                                  |                |
| Minimum Initial Lamp Lumens                               | ≥ 2585 Lumens for 28 W                |                |
|   | ≥ 2400 Lumens for 25 W                |                |
| Lamp Life(2)  | ≥ 18,000 hrs at three hours per start |                |
| Lumen Maintenance –or- Minimum Mean Lumens(3)             | ≥ 94% -or-                            |                |
|   | ≥ 2430 Lumens for 28 W                |                |
|   | ≥ 2256 Lumens for 25 W                |                |
| Performance Characteristics for 28 and 25 W Ballasts      |                                       |                |
| Ballast Frequency   | 20 to 33 Hz or ≥ 40 kHz               |                |
| Power Factor  | ≥ 0.90                                |                |
| Total Harmonic Distortion                                 | ≤ 20%                                 |                |
| Performance Characteristics for Ballasts(4), 28 W systems |                                       |                |
| Ballast Efficiency Factor (BEF)                           | Instant Start Ballast (BEF)           |                |
| BEF = [BF x 100]/Ballast Input Watts<br>Based on:         | Lamps                                 | All BEF Ranges |
|   | (1) Type of ballast                   | 1              |
|   | (2) No. of lamps driven by ballast    | 2              |
|   | (3) Ballast Factor                    | 3              |
|   |                                       | 4              |
|   |                                       | ≥ 3.52         |
|   |                                       | ≥ 1.76         |
|   |                                       | ≥ 1.16         |
|   |                                       | ≥ 0.88         |
| Performance Characteristics for Ballasts(4), 25 W systems |                                       |                |
| Ballast Efficiency Factor (BEF)                           | Instant Start Ballast (BEF)           |                |
| BEF = [BF x 100]/Ballast Input Watts<br>Based on:         | Lamps                                 | All BEF Ranges |
|   | (1) Type of ballast                   | 1              |
|   | (2) No. of lamps driven by ballast    | 2              |
|   | (3) Ballast Factor                    | 3              |
|   |                                       | 4              |
|   |                                       | ≥ 3.95         |
|   |                                       | ≥ 1.98         |
|   |                                       | ≥ 1.32         |
|   |                                       | ≥ 0.99         |

- (1) Lamps ≥ 4500 K and/or 24,000 hours have a system efficiency specified ≥ 88 MLPW. Minimum initial and mean lumen levels are specified as follows: for 28 W lamps, limits are 2600/2340. For 25 W lamps, limits are 2300/2185.
- (2) Life rating is based on an instant start ballast tested in accordance with ANSI protocols. When used for Program Start Ballast, life may be increased depending upon the operating hours per start.
- (3) Mean lumens measures at 7,200 hours
- (4) Multi-voltage Ballasts must meet or exceed the listed Ballast Efficiency Factor when operated on at least one of the intended operating voltages.

**Permanent Lamp Removal (Pre-notification is required)**

Incentives are available for the permanent removal of existing fluorescent lamps. Permanent lamp removal is the net reduction in the quantity of lamps after a project is completed. Customers are responsible for determining whether or not to use reflectors in combination with lamp removal in order to maintain adequate lighting levels. Lighting retrofits are expected to meet the Illuminating Engineering Society of North America (IESNA) recommended light levels. Unused lamps, lamp holders, and ballasts must be removed permanently from the fixture and disposed of in accordance with local regulations. This measure is applicable when retrofitting from T12 lamps to T8 lamps only. Removal of lamps from a T12 fixture that is not being retrofitted with T8 lamps is not eligible for this incentive.

**Exit Signs**

High-efficiency exit signs must replace or retrofit an existing incandescent exit sign. Electroluminescent, T1, and light-emitting diode (LED) exit signs are eligible under this category. Non-electrified and remote exit signs are not eligible. All new exit signs or retrofit exit signs must be UL or ETL listed, have a minimum lifetime of 10 years, and have input wattages ≤ 5 Watts per face, or be ENERGY STAR qualified.

**LED Traffic and Pedestrian Lights**

Incentives are available for LED traffic lights on a per-signal basis (including arrows) that replace or retrofit an existing incandescent traffic signal. At minimum, red and green lamps must be retrofitted to qualify for the signal incentive. Signals shall have a maximum LED module wattage of 17. Incentives are not available for spare lights. Lights must be hard-wired, with the exception of pedestrian hand signals.

**Lighting Occupancy Sensors**

Passive infrared, ultrasonic detectors and fixture-integrated sensors or sensors with a combination thereof are eligible. All sensors must be hard-wired and control interior lighting fixtures. To assist in incentive processing, please provide the inventory of the controlled fixtures with the Final Application.

**Central Lighting Control**

Incentives are available for automated central lighting control systems with override capabilities. The occupants' schedule of operation must be taken into consideration when programming the system. This measure includes time clocks, package programmable relay panels, and complete building automation controls. Photo sensors may also be incorporated into the central lighting control system. Incentive is calculated per square foot of lighting controlled.

**Switching Controls for Multilevel Lighting**

This measure should be used with daylight or occupancy sensors and is applicable to spaces that require various lighting schemes (ex. classrooms, auditoriums, conference rooms). Multilevel lighting switching controls also are applicable to warehouse settings with skylights, where they can be combined with occupancy sensors and/or daylight controls. When combined with daylight or occupancy sensors, commissioning is highly recommended to ensure proper performance of the switching controls. Incentive is calculated per square foot of lighting controlled.

**Daylight Sensor Controls**

Incentives are available for daylight sensor controls in spaces with reasonable amounts of sunlight exposure and areas where task lighting is not critical. The controls can be on/off, stepped, or continuous (dimming). The on/off controller should turn off artificial lighting when the interior illuminance meets the desired indoor lighting level. The stepped controller generally dims the artificial lighting 50 percent when the interior illuminance levels reach 50 percent of the desired lighting levels. Continuous or dimming controllers dim artificial lighting proportional to the available daylight. All types of daylight sensor controls are required to be commissioned in order to ensure proper sensor calibration and energy savings. Incentive is calculated per square foot of lighting controlled.

**Exterior or Garage HID to LED/Induction Lighting Retrofit**

Incentives are available in exterior or garage applications for replacing existing high intensity discharge fixtures with LED or induction fixtures. Fixture replacement must result in at least a 40 percent power reduction. LED fixtures should have a minimum efficacy of 35 lumens per watt. Applications include canopy lighting and wall packs. This measure is applicable to exterior fixtures that are typically on about 12 hours a night. Photocells or time clocks should be utilized at facilities that do not control exterior fixtures during daylight hours.

**Exterior Lighting, Bi-Level Control with Override**

Incentives are available for installing exterior bi-level controls to HID lighting that reduce lighting levels by at least 50 percent when the space is unoccupied. The HID lighting must have an electronic ballast capable of reduced power levels, and be coupled with motion sensors to bring the light back to full lumen output for security reasons. The controls include on/off controls, dimmers, and hi-lo ballast controls. This measure is applicable to exterior fixtures that are on during the night.

**New T8/T5 Fluorescent Fixtures (Pre-notification is required)**

This measure consists of replacing one or more existing fixtures with new fixtures containing T8 or T5 lamps and electronic ballasts. The most common application involves replacing a high bay HID fixture with a new fluorescent fixture. The T8 or T5 lamps must have a color rendering index (CRI) ≥ 80. The electronic ballast must be high frequency (≥ 20 kHz), UL listed, and warranted against defects for five years. Ballasts must have a power factor (PF) ≥ 0.90. Ballasts for 4-foot lamps must have total harmonic distortion (THD) ≤ 20 percent at full light output. For 2-foot and 3-foot lamps, ballasts must have THD ≤ 32 percent at full light output. High output T5/T8 lamps also qualify for this incentive. This incentive may be used in high bay and low bay fluorescent applications. Specifications of the new fixtures, lamps and ballasts, must accompany the final application. If specification sheets are not included, the default fixture wattages provided in the Policies and Procedures Manual will be used instead. Incentives are only available for new fixtures. Retrofit kits are not considered to be new fixtures.

**Examples of Common Lighting Retrofits**

Examples of the incentives associated with common retrofits found in the commercial sector are shown in the table below. In order to calculate the incentives for replacing metal halides with new T8 and T5 fixtures.

**Table 3: Metal Halide to New T8/T5 Common Retrofit Examples**

| Existing Measure      | Retrofitted Measure              | Wattage Reduction | Incentive |
|-----------------------|----------------------------------|-------------------|-----------|
| 250W MH               | 3-lamp, 4-foot T5 HO             | 105               | \$36.75   |
| 400W MH               | 4-lamp, 4-foot T5 HO             | 212               | \$74.20   |
| 400W MH               | 6-lamp, 4-foot T5 HO             | 90                | \$31.50   |
| 750W MH               | 8-lamp, 4-foot T5 HO             | 364               | \$127.40  |
| 1000W MH              | Two 6-lamp, 4-foot T5 HO         | 350               | \$122.50  |
| 150-175W MH           | 3-lamp, 4-foot F32 T8            | 115               | \$40.25   |
| 250W MH               | 4-lamp, 4-foot F32 T8 HP ballast | 146               | \$51.10   |
| 400W MH               | 6-lamp, 4-foot F32 T8 HP ballast | 235               | \$82.25   |
| 400W MH               | 8-lamp, 4-foot F32 T8 HP ballast | 167               | \$58.45   |
| 1000W MH              | Two 8-lamp, 4-foot F32 T8        | 504               | \$176.40  |
| 4-lamp, 8-foot T12 HO | 4-lamp, 4-foot T5 HO             | 177               | \$61.95   |

## 2010 HVAC (ELECTRIC) INCENTIVES WORKSHEET

| Equipment Type                             | Size Category  | Qualifying Efficiency | Incentive (per ton) |
|--|--|-----------------------|---------------------|
| Unitary and Split Air Conditioning Systems | ≤ 65,000 Btu/h (5.4 tons)                                  | 14.0 SEER             | \$30.00             |
|  | > 65,000 Btu/h (5.4 tons),<br>≤ 240,000 Btu/h (20 tons)    | 11.0 EER              | \$40.00             |
|  | > 240,000 Btu/h (20 tons),<br>≤ 760,000 Btu/h (63 tons)    | 10.0 EER              | \$40.00             |
|  | > 760,000 Btu/h (63 tons)                                  | 10.0 EER              | \$30.00             |
| Air Source Heat Pumps                      | ≤ 65,000 Btu/h (5.4 tons)                                  | 14.0 EER              | \$26.00             |
|  | > 65,000 Btu/h (5.4 tons),<br>≤ 135,000 Btu/h (11.25 tons) | 11.0 EER              | \$40.00             |
|  | > 135,000 Btu/h (11.25 tons)                               | 10.0 EER              | \$40.00             |

| Equipment Type                   | Size Category | Qualifying Efficiency | Incentive (per ton) |
|----------------------------------|---------------|-----------------------|---------------------|
| Room Air Conditioners            | All           | Energy Star (Tier 1)  | \$30.00             |
| Package Terminal Air Conditioner | All           | See Spec (Tier N/A)   | \$25.00             |
| Package Terminal Heat Pump       | All           | See Spec (Tier N/A)   | \$30.00             |

| Equipment Type<br>(dropdown) | Make and Model | EER | SEER or<br>IPLV | HSPF or COP | Unit Size (tons)<br>(A) | Quantity<br>(B) | Incentive Per Ton<br>(C) | Incentive<br>(A*B*C) |
|------------------------------|----------------|-----|-----------------|-------------|-------------------------|-----------------|--------------------------|----------------------|
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |
|                              |                |     |                 |             |                         |                 |                          |                      |

| Equipment Type          | Size Category | Qualifying Efficiency | Qualifying Incentive<br>(per ton) | Incremental Efficiency Unit | Incentive per Incremental<br>Efficiency Unit<br>(per ton) |
|-------------------------|---------------|-----------------------|-----------------------------------|-----------------------------|---|
| Ground-source Heat Pump | ALL           | EER = 17.0            | \$30.00                           | 0.1 EER Increase            | \$1.00  |
| Air-cooled Chiller      | ALL           | IPLV = 1.04 kW/ton    | \$30.00                           | 0.01 kW/ton IPLV Reduction  | \$2.00  |
| Water-cooled Chiller    | ALL           | See Spec              | \$30.00                           | 0.01 kW/ton IPLV Reduction  | \$2.00  |

| Equipment Type<br>(dropdown) | Make and Model | EER | kW/ton Full<br>Load | kW/ton IPLV | Unit Size (tons)<br>(A) | Quantity<br>(B) | Incentive Per Ton**<br>(C) | Incentive<br>(A*B*C) |
|------------------------------|----------------|-----|---------------------|-------------|-------------------------|-----------------|----------------------------|----------------------|
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |
|                              |                |     |                     |             |                         |                 |                            |                      |

**Total HVAC (Electric) Incentives:**

\* Customer acknowledges and agrees that Customer cannot apply for, nor receive, incentives for the same product, equipment or service from more than one utility.

\*\* Total incentive per ton equals the qualifying base incentive per ton plus the incentive per incremental efficiency increase.

Example: 100 ton air-cooled chiller at 1.02 kW/ton

Base incentive is 100 tons x \$30/ton = \$3,000

Additional incentive is 100 tons x (1.04 - 1.02)/0.01 x \$2.00 = \$400

Total incentive is \$3,400

## 2010 HVAC (ELECTRIC) SPECIFICATIONS

### Unitary and Split Air Conditioning Systems and Air Source Heat Pumps

New unitary air conditioning units or air source heat pumps that meet or exceed the qualifying cooling efficiency shown in the HVAC Electric Incentives worksheet are eligible for an incentive. They may be either split systems or single package units. The efficiency of split systems is based on an ARI reference number. Water-cooled systems, evaporative coolers, and water source heat pumps do not qualify as prescriptive measures, but may qualify for a custom incentive. All packaged and split system cooling equipment must meet Air Conditioning and Refrigeration Institute (ARI) standards (210/240, 320 or 340/360), be UL listed, use a minimum ozone-depleting refrigerant (e.g., HCFC or HFC). A manufacturer's specification sheet indicating the system efficiency must accompany the application. Disposal of the existing unit must comply with local codes and ordinances. Incentives for heat pumps are available only for the replacement of an existing heat pump.

### Room Air Conditioners

Room air conditioning units are through-the-wall (or built-in) self-contained units that are two tons or less. There are two eligible efficiency levels as listed by the CEE ([www.cee1.org](http://www.cee1.org)). A unit must qualify under ENERGY STAR® standards. The minimum requirements and eligible equipment are listed in the CEE high efficiency room air conditioning specifications ([www.cee1.org](http://www.cee1.org)). These units are with and without louvered sides, without reverse cycle (i.e., heating), and casement. The qualifying efficiencies are provided in Table 1 below. Disposal of existing unit must comply with local codes and ordinances.

**Table 1:** Qualifying AC efficiencies

| Size (Btu/h)                      | 2000 ENERGY STAR (EER) |
|-----------------------------------|------------------------|
| < 8,000 (< 0.67 tons)             | 10.7                   |
| 8,000 - 13,000 (0.67 - 1.08 tons) | 10.8                   |
| 14,000 - 19,999 (1.2 - 1.67 tons) | 10.7                   |
| ≥ 20,000 (>1.67 tons)             | 9.4                    |

### Package Terminal AC and Heat Pump Units (PTAC/PTHP)

Package terminal air conditioners and heat pumps are through-the-wall self contained units that are two tons (24,000 Btu/h) or less. Only units that have an EER greater than or equal to  $11.99 - (0.234 * \text{Capacity} / 1000)$ , where capacity is in Btu/h, qualify for the incentive (10 percent above IECC 2006 Standard). All EER values must be rated at 95 °F outdoor dry-bulb temperature.

### Ground-source Heat Pumps

New ground-source heat pumps that meet or exceed the qualifying Energy Efficiency Ratio (EER) and Coefficient of Performance (COP) as listed in the HVAC Incentive Worksheet Table are eligible for an incentive. Equipment with an EER equal to 17 receive a fixed incentive; equipment with an EER value greater than the qualifying value will be paid per 0.1 EER incremental increase. All equipment must meet Air Conditioning and Refrigeration Institute (ARI) standards (325 or 330) and be UL listed. EER is the efficiency at standard (ARI/ISO) conditions of 77°F entering water for closed-loop models and 59°F entering water for open-loop systems. A manufacturer's specification sheet indicating the system efficiency for cooling and heating must accompany the application. Disposal of the existing unit must comply with local codes and ordinances. Incentives for heat pumps are available only for the replacement of an existing heat pump.

### Air- and Water-cooled Chillers

Chillers are eligible for an incentive if they have a rated kW/ton for the Integrated Part Load Value (IPLV) and/or EER that is less than or equal to the qualifying Level 1 (10 percent below IECC 2006 standard) efficiency shown in the table below. The chiller efficiency rating must be based on ARI Standard 550/590-2003 for IPLV and/or based on full-load conditions. The chillers must meet ARI standards 550/590-2003, be UL listed, and use a minimum ozone-depleting refrigerant (e.g., HCFC or HFC). The ARI net capacity value should be used to determine the chiller tons. A manufacturer's specification sheet with the rated full load kW/Ton or COP and kW/Ton-IPLV or COP-IPLV must accompany the application. Qualifying efficiencies for chillers are summarized in Table 2 below. There is a fixed incentive for reaching the minimum qualifying efficiency, and incremental incentives for every 0.1 kW/ton-IPLV reduction from the minimum required.

**Table 2:** Water Cooled Qualifying Chiller Efficiencies (kW/ton)

| Equipment Category               | Capacity Range (Btu/h) | IPLV  | Full Load |
|----------------------------------|------------------------|-------|-----------|
| Screw, Scroll, or Helical-rotary | < 150 tons             | 0.612 | 0.711     |
|                                  | 150-300 ton            | 0.567 | 0.648     |
|                                  | > 300 ton              | 0.513 | 0.576     |
| Centrifugal                      | < 150 tons             | 0.603 | 0.630     |
|                                  | 150-300 ton            | 0.540 | 0.567     |
|                                  | > 300 ton              | 0.495 | 0.522     |
| Reciprocating                    | All                    | 0.630 | 0.753     |

## 2010 GAS INCENTIVES WORKSHEET

### HVAC

| Equipment Type  | Incentive  | Unit        | # of Units | Incentive Calculated |
|---|------------|-------------|------------|----------------------|
| <b>Steam Traps</b>  |            |             |            |                      |
| Steam Trap Test   | \$5.00     | Unit        |            |                      |
| Leaking Steam Trap Repair or Replacement                                | \$100.00   | Unit        |            |                      |
| <b>Space Heating Boilers</b>  |            |             |            |                      |
| Boiler $\geq$ 0.86 and $<$ 0.90 AFUE or Combustion Efficiency - Level 1 | \$1.00     | kBtu/h      |            |                      |
| Boiler $\geq$ 0.90 AFUE or Combustion Efficiency - Level 2              | \$3.00     | kBtu/h      |            |                      |
| <b>Boiler Tune-up and Controls</b>                                      |            |             |            |                      |
| Boiler Tune-up  | \$350.00   | Unit        |            |                      |
| Boiler Modulating Burner Control Retrofit (5:1 turn-down or greater)    | \$1,250.00 | Unit        |            |                      |
| Boiler Water Reset Control  | \$400.00   | Unit        |            |                      |
| <b>Other</b>  |            |             |            |                      |
| Pipe Wrap - Steam Boiler  | \$6.00     | Linear feet |            |                      |
| High Efficiency Furnace or Rooftop Unit ( $\leq$ 200 kBtu/h)            | \$350.00   | Unit        |            |                      |
| High Efficiency Furnace or Rooftop Unit ( $>$ 200 kBtu/h)               | \$1.75     | kBtu/h      |            |                      |
| Infrared Heaters*   | \$5.00     | kBtu/h      |            |                      |
| Programmable Thermostat*  | \$50.00    | Unit        |            |                      |
| Hotel Guest Room Occupancy Sensor* (Gas Heat)                           | \$65.00    | Unit        |            |                      |
| Demand Control Ventilation  | \$0.05     | Square Foot |            |                      |
| <b>Total Gas HVAC Incentives:</b>                                       |            |             |            |                      |

### WATER HEATING

| Equipment Type   | Incentive | Unit            | # of Units | Incentive Calculated |
|--|-----------|-----------------|------------|----------------------|
| Water Heat Pipe Wrap - Hot Water Boiler                          | \$4.00    | Linear feet     |            |                      |
| Gas Water Heater Pre-rinse Sprayers ( $<$ 1.6 gpm)               | \$30.00   | Unit            |            |                      |
| Gas Water Heater ( $\leq$ 80 gal)                                | \$35.00   | Unit            |            |                      |
| Gas Water Heater ( $>$ 80 gal)                                   | \$150.00  | Unit            |            |                      |
| Gas Tankless Water Heater  | \$150.00  | Unit            |            |                      |
| High Efficiency Clothes Washer* (Gas Water Heat, Electric Dryer) | \$50.00   | Unit            |            |                      |
| High Efficiency Clothes Washer* (Gas Water Heat, Gas Dryer)      | \$50.00   | Unit            |            |                      |
| High Efficiency Pool Heater (Gas Heat)                           | \$2.00    | MBtu            |            |                      |
| Pool Covers  | \$0.50    | SF surface area |            |                      |
| <b>Total Gas Water Heating Incentives:</b>                       |           |                 |            |                      |

\* Customer acknowledges and agrees that Customer cannot apply for, nor receive, incentives for the same product, equipment or service from more than one utility.

## 2010 GAS SPECIFICATIONS

### General Clause for Heating Measures

The incentive is available only for retrofit projects using natural gas as the primary fuel source. If a dual-fuel system is used, or if natural gas is the back-up or redundant fuel, the custom incentive application should be used. Incentives for boilers are only available for equipment used for space heating, except for steam traps. Equipment for process loads may qualify for a custom incentive.

### Steam Trap Survey and Repair/Replacement

The customer may apply for the survey incentive, the repair incentive, or both. The survey incentive is available for all steam traps, functional, failed closed, or plugged. The repair incentive is available only for repair or replacement of traps that have malfunctioned and are leaking steam. It is not available for traps that have failed closed or are plugged. The incentive is available once in a 24 month period. Replacement with an orifice trap is not eligible for incentive. Steam trap survey and repair work must be recorded and attached to the incentive application by the vendor. A spreadsheet with survey/repair/replacement results must be provided. Details of data needs are provided in the program Policies and Procedures Manual.

### High Efficiency Space Heating Boiler

Boiler incentives are available only for equipment used for space heating. Boilers for process loads may qualify for a custom incentive. Boilers purchased for backup or redundancy are not eligible. Boilers must modulate their firing rate and have a sealed combustion unit. Applicant must submit boiler specifications with steady state boiler input and output ratings. The ratings will be defined per ANSI Standard Z21.13 and use supply and return water temperatures. Note that high efficiency condensing boilers will provide the rated efficiency only if return water is cold enough to condense the flue gases. If the heating system cannot meet the requirement, a non-condensing boiler may be a better choice. Qualifying efficiencies are shown in Table 1 below. For units with an input rating less than 300,000 Btu/h, the efficiency should be given as an AFUE value. For units with an input rating greater than or equal to 300,000 Btu/h, the efficiency should be given as a combustion efficiency value.

**Table 1:** Minimum efficiency requirements for gas space heating boilers

| Incentive Level | Minimum Efficiency |
|-----------------|--------------------|
| Level 1         | ≥ 0.86 and < 0.90  |
| Level 2         | ≥ 0.90             |

### Boiler Tune-up

Incentive is only available for natural gas space-heating boilers. The minimum burner size for measure eligibility is 110,000 Btu/h. The incentive is available once in a 24 month period. The service provider must perform before and after combustion efficiency tests and record the results on the boiler tune-up incentive application. Burner must be adjusted to improve combustion efficiency as needed. The incentives are only available for equipment used in space heating conditions. Equipment for process load does not qualify. Details of documentation requirements are provided in the program Policies and Procedures Manual.

### Boiler Modulating Burner Control

The control must have a minimum turn down ration of 5 to 1 or greater. Boiler must operate a minimum of 4,000 hours per year to be eligible for this incentive. The incentive is eligible only for retrofit projects, not for new controls on a new boiler. The incentives are available only for equipment used in space heating conditions.

### Boiler Water Reset Control

Outside air temperature reset or cutout control incentives are for existing space heating boilers only. A new boiler with boiler reset controls is not eligible. The system must be set so that the minimum temperature is not more than 10 degrees above manufacturer's recommended minimum return temperature. For controls on multiple boilers to qualify, control strategy must stage the lag boiler(s) only after the first boiler stage(s) fails to maintain the boiler water temperature called for by the reset control.

### Pipe Wrap - Steam Boiler

A minimum of 1 inch of R-4 pipe insulation must be added to existing bare commercial or industrial steel pipe system applications. The bare pipe size must be at least ½" or larger. A minimum of 10 linear feet of pipe must be insulated. Insulation used for pipes should be high density fiberglass shaped for pipes and blankets, batts of fiberglass or mineral wool for flat sections. Applications must include the manufacturer's name, insulation material type, and the material k-value or R-value rating. All hot surfaces should be insulated.

**High Efficiency Furnace, Roof Top Unit and Unit Heater**

Condensing furnaces must be 92 percent AFUE (Annual Fuel Utilization Efficiency) or greater and have a sealed combustion unit. Air handlers are not eligible for the incentive. Chimney liners must be installed where a high efficiency natural gas furnace replaces atmospherically drafted equipment that was vented through the same flue as a gas water heater. Flue closure protocol must be used when a high efficiency furnace is installed and the chimney is no longer in use. The incentives are available only for equipment used in space heating conditions. Equipment purchased for backup or redundancy is not eligible. Rooftop units also qualify. Incentives are \$350 per unit up to 200 kBtu/h, and incrementally at \$1.75 per kBtu/h for units greater than 200 kBtu/h.

**Infrared Heaters**

Only building space heating applications are eligible. High-intensity and low-intensity heaters are eligible. Low-intensity heaters must use outside non-conditioned air for combustion. Heaters must have electronic ignition.

**Programmable Thermostat**

Programmable Thermostat must have the capability of enabling the user to set one or more time periods each day when a comfort set point temperature needs to be maintained and one or more time periods each day when an energy-saving set point temperature needs to be maintained.

**Hotel Guestroom Occupancy Sensor (Gas Heat)**

Incentives are available for sensors that control natural gas heating units for individual hotel rooms. Sensors controlled by a front desk system are not eligible. Sensors must be controlled by automatic occupancy detectors, and it is recommended that during unoccupied periods, the default setting for controlled units differ by at least 8 degrees from the operating set point. The incentive is per guest room controlled, not per sensor; for multiroom suites. The incentive is available per room controlled, if a sensor is installed in each room. Replacement or upgrades of existing occupancy-based controls are not eligible as a prescriptive incentive.

**Demand Control Ventilation**

Install ventilation controls on existing buildings that use carbon dioxide levels to measure occupancy and modify the percentage of outside air based on variable levels. Only building with space heating and cooling applications are eligible. Conditioned spaces must be kept between 65°F and 75°F during operating hours. Systems must have current fresh air requirements equal or greater to 10 percent of supply air requirements. Carbon dioxide (CO<sub>2</sub>) sensors must be installed in conjunction with fully functioning air side economizers. Dual temperature air-side economizers with zone-level CO<sub>2</sub> sensors for rooftop units qualify, and return system CO<sub>2</sub> sensors are required for built up systems. Controlled space must meet the minimum requirements of the current ASHRAE 62 standard, as well as all local building code, and manufacturer's recommendations. The incentive is calculated per square foot of area controlled.

**Water Heat Pipe Wrap - Hot Water Boiler**

A minimum of 1 inch of R-4 pipe insulation must be added to existing bare commercial or industrial steel pipe system applications. The bare pipe size must be at least ½" or larger. A minimum of 10 linear feet of pipe must be insulated. Insulation used for pipes should be high density fiberglass shaped for pipes and blankets, batts of fiberglass or mineral wool for flat sections. Applications must include the manufacturer's name, insulation material type, and the material k-value or R-value rating. All hot surfaces should be insulated.

**Pre Rinse Sprayers - < 1.6 gpm (Gas Water Heater)**

A low-flow, high efficiency pre-rinse sprayer less than or equal to 1.6 gallons per minute must replace a sprayer of 2.2 gpm or greater. Most installed sprayers are 2.5 gpm or greater. Customer must be a gas customer of the utility, and use gas fueled water heating.

## 2010 Gas Specifications, Continued

### Gas Storage Water Heater

Heater must replace existing natural gas water heater that meets the criteria in Table 2 shown below.

**Table 2:** Minimum efficiency requirements for gas storage water heaters.

| Size (Gallons) | Minimum Efficiency     |
|----------------|------------------------|
| ≤ 80           | 0.62 Energy Factor     |
| > 80           | 88% Thermal Efficiency |

### Gas Tankless Water Heater

Heater must replace existing natural gas water heater. Unit must be power vented with an Energy Factor of 0.82 or greater.

### High Efficiency Clothes Washer (Gas Water Heater)

Incentives are available for high efficiency commercial clothes washers, which wash more clothes per load than standard clothes washers and use less water and energy. Qualified clothes washers must meet a minimum efficiency of CEE Tier 2 (MEF ≥ 2, WF ≤ 6).

### High Efficiency Pool Heater

Heater must be equal to or greater than 84 percent thermal efficiency and must replace pre-existing pool heater. Heater must be rated between 500,000 Btu/h and 2,000,000 Btu/h. Must have an on/off switch and have no pilot light. The pool heater cannot be used as a back-up for solar water-heating.

### Pool Covers

The pool size must be between 400 square feet to 4,000 square feet to qualify for the incentive. Equipment must be new. Cover must be a manual, semi-automatic or automatic pool cover.



## 2010 MOTOR & DRIVE SPECIFICATIONS

### **NEMA (National Electrical Manufacturers Association) Premium Motors**

Motors eligible for an incentive are three-phase AC induction motors, 1-250 HP, of open drip-proof (open) and totally enclosed fan-cooled (closed) classifications. Rewound motors do not qualify. Incentives are based on the motor's Nominal Full Load Efficiencies, tested in accordance with IEEE (Institute of Electrical and Electronics Engineers) Standard 112, method B, that meet or exceed the NEMA Premium efficiency standards on the Motor Incentives Worksheet. The application must include the manufacturer's performance data sheet that at least shows equipment type, equipment size, model number, and efficiency rating. Customers should consider matching RPMs of the existing pump or fan when installing energy efficient motors that inherently have higher speeds (less slip), which may affect electric energy use.

Program incentives for this measure are available until December 19, 2010. Per new federal efficiency standards enacted in H.R. 6, all general purpose motors (subtype I) manufactured after Dec. 19, 2010, with a power rating between 1 horsepower and 200 horsepower are required to have nominal full-load efficiencies equal to or greater than the NEMA MG- 1 (2006) Table 12-12 (aka NEMA Premium<sup>®</sup> efficiency) levels.

### **Variable Frequency Drives on HVAC Motors**

Variable frequency drives (VFDs) installed on existing HVAC fans and pumps are eligible for this incentive. Redundant or back-up units do not qualify. New chillers with integrated VFDs are eligible under the chiller incentive, and installing VFDs on existing chillers and package unit compressors may be eligible under the custom incentive. VFDs on new equipment are not eligible. The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as inlet vanes, bypass dampers, and throttling valves. VFDs for nonHVAC applications may be eligible for a custom incentive, which include process motors (except smaller process pumping applications), chillers, and air compressors. The incentive is per controlled HP.

### **Variable Frequency Drives for Process Pumping**

VFD must be used in conjunction with a process (non HVAC) pumping application. Redundant or back-up units do not qualify. Routine replacement of existing VFDs does not qualify. VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal. The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as throttling valves. To qualify for this incentive, the pump must operate at least 2,000 hours per year. The incentive is per controlled HP and only eligible for controlled motors less than or equal to 50 HP.

## 2010 MISCELLANEOUS ELECTRIC INCENTIVES WORKSHEET

| Equipment Type  | Incentive | Unit              | # of Units | Incentive Calculated |
|---|-----------|-------------------|------------|----------------------|
| <b>Occupancy Sensors and Controls</b>                                 |           |                   |            |                      |
| Beverage Vending Machine Controllers                                  | \$50.00   | Unit              |            |                      |
| Hotel Guest Room Occupancy Sensor* (Electric Heat)                    | \$65.00   | Unit              |            |                      |
| Intelligent Surge Protector   | \$10.00   | Unit              |            |                      |
| <b>Energy Efficient Ice Machines</b>                                  |           |                   |            |                      |
| Energy Efficient Ice Machines, < 500 lbs                              | \$200.00  | Unit              |            |                      |
| Energy Efficient Ice Machines, 500 to 1,000 lbs                       | \$400.00  | Unit              |            |                      |
| Energy Efficient Ice Machines, 1,000 to 1,500 lbs                     | \$700.00  | Unit              |            |                      |
| <b>Commercial Kitchen and Refrigeration</b>                           |           |                   |            |                      |
| Pre-rinse Sprayers (< 1.6 gpm, Electric Water Heating)                | \$30.00   | Unit              |            |                      |
| LED Lighting for Refrigeration Cases                                  | \$50.00   | Door              |            |                      |
| Anti-sweat Heater Controls  | \$80.00   | Door              |            |                      |
| Night Covers  | \$6.00    | Linear foot       |            |                      |
| <b>Other</b>  |           |                   |            |                      |
| Network Power Management Software                                     | \$12.00   | per PC controlled |            |                      |
| Barrel Wraps - Injection Molding and Extruders                        | \$1.00    | Ton               |            |                      |
| Demand Control Ventilation  | \$0.05    | Square Foot       |            |                      |
| Compressed Air Engineered Nozzle                                      | \$100.00  | Unit              |            |                      |
| High Efficiency Clothes Washer* (Electric Water Heat, Electric Dryer) | \$50.00   | Unit              |            |                      |
| High Efficiency Clothes Washer* (Electric Water Heat, Gas Dryer)      | \$50.00   | Unit              |            |                      |
| <b>Total Miscellaneous Electric Incentives:</b>                       |           |                   |            |                      |

\* Customer acknowledges and agrees that Customer cannot apply for, nor receive, incentives for the same product, equipment or service from more than one utility.

## 2010 MISCELLANEOUS ELECTRIC SPECIFICATIONS

### **Beverage Vending Machine Controllers**

Controller must include a passive infrared occupancy sensor to turn off fluorescent lights and other vending machine systems when the surrounding area is unoccupied for 15 minutes or longer. Also, the control logic should power up the machine at a minimum of every two hours to maintain product temperature and provide compressor protection. For refrigerated beverage machines located indoors, backlighting lamps and ballasts should be removed to obtain additional energy savings.

### **Hotel Guest Room Occupancy Sensor (Electric Heat)**

Incentives are available for sensors that control heat pumps, and other electric heating units for individual hotel rooms. Sensors controlled by a front desk system are not eligible. Sensors must be controlled by automatic occupancy detectors, and it is recommended that during unoccupied periods, the default setting for controlled units differ by at least 8 degrees from the operating set point. The incentive is per guest room controlled, not per sensor; for multiroom suites. The incentive is available per room controlled, if a sensor is installed in each room. Replacement or upgrades of existing occupancy-based controls are not eligible as a prescriptive incentive.

### **Intelligent Surge Protector**

This incentive applies to surge protectors with built-in plug-load detection and control capabilities. The surge protector (power strip) must include at least one uncontrolled socket, which would be a primary device. Turning the primary device (usually a computer) on or off subsequently will turn the associated controlled devices in the power strip on or off (for example, printers, monitors, etc.). The intelligent power strip also may contain sockets for devices that require a constant supply of power. These will not be affected by the "control" device.

### **Energy Efficient Ice Makers**

The incentive covers ice machines that generate ice cubes, flaked, crushed, or fragmented ice that is 60 grams (2 oz) or less. Only air-cooled machines qualify (self-contained, ice-making heads, or remote condensing). The machine must have a minimum capacity of 101 lbs of ice per 24-hour period. The minimum efficiency required is per ENERGY STAR® or CEE Tier 2 ([www.cee1.org](http://www.cee1.org)). A manufacturer's specification sheet must accompany the application showing the rating in accordance with ARI Standard 810.

### **Pre-rinse Sprayers (< 1.6 gpm, Electric Water Heating)**

A low-flow, high efficiency pre-rinse sprayer less than or equal to 1.6 gallons per minute must replace a sprayer of 2.2 gpm or greater. Most installed sprayers are 2.5 gpm or greater. Customer must be an electric customer of the utility, and use electric hot water heating.

### **LED Lighting for Refrigeration Cases**

Incentives are for replacing fluorescent refrigerated case lighting with light emitting diode (LED) source illumination. Fluorescent lamps, ballasts, and associated hardware are typically replaced with pre-fabricated LED light bars and LED driver units.

### **Anti-sweat Heater Controls**

A control device is installed that senses the relative humidity in the air outside of the display case and reduces or turns off the glass door (if applicable) and frame anti-sweat heaters at low-humidity conditions. Technologies that can turn off anti-sweat heaters based on sensing condensation (on the inner glass pane) also qualify. Incentive is based on the total number of doors controlled on the case.

### **Night Covers**

**Incentives** are available for night covers installed on open refrigerated display cases in supermarkets and grocery stores. The purpose of night covers is to reduce the amount of cold loss from the open refrigerated display cases during facility non-operating hours. The store must have a minimum of six non-operating hours per day for this measure to qualify. To decrease moisture build-up, it is recommended that the night covers are perforated. Applicant should consider using proper compressor capacity modulation and ensure the case manufacturer has no objections to use of a night cover.

## 2010 Miscellaneous Electric Specifications, Continued

### Network Power Management Software

This measure is for the control of desktop computers only. Installation must allow centralized control at the server level of the power management settings (sleep mode and shutdown) of desktop computers on a distributed network. The software must have a reporting feature that allows monitoring and validation of energy savings. Qualifying software must result from: a new installation, where none previously existed; or an upgrade of an operating system or other network support software where the desktop computer power management function did not previously exist. When contacted, customers must allow Consumers Energy access to customers' property site to verify: the software installation, the location of the installed control software (at the server level), and the number of desktop computers controlled by the system. This measure is not applicable for the control of laptop and laptop stations.

A copy of the software license agreement and a report (print-out) directly from the network energy management software that shows (a) the location and (b) the number of desktop computers that are being controlled by the system must be attached to and included with the final application.

### Barrel Wraps for Injection Molders and Extruders

Insulated blankets strapped around barrels of extruders or injection molders are eligible for this incentive. Blankets must be installed on previously un-insulated barrels, per manufacturer recommendations.

### Demand Control Ventilation

Install ventilation controls on existing buildings that use carbon dioxide levels to measure occupancy and modify the percentage of outside air based on variable levels. Only buildings with space heating and cooling applications are eligible. Conditioned spaces must be kept between 65°F and 75°F during operating hours. Systems must have current fresh air requirements equal or greater to 10 percent of supply air requirements. Carbon dioxide (CO<sub>2</sub>) sensors must be installed in conjunction with fully functioning air side economizers. Dual temperature air-side economizers with zone-level CO<sub>2</sub> sensors for rooftop units qualify, and return system CO<sub>2</sub> sensors are required for built up systems. Controlled space must meet the minimum requirements of the current ASHRAE 62 standard, as well as all local building code, and manufacturer's recommendations. Incentives are calculated per square foot of area controlled.

### Engineered Nozzle

The engineered nozzle must replace simple open pipe/tube assemblies connected to a compressed air system. Usage of the nozzles must be 2,000 hours or greater per year. The engineered nozzles must be between 1/8" and 1/2" in diameter. Air jets and nozzles must have an SCFM rating at 80 psig less than or equal to those rated in Table 1 below.

**Table 1: Qualifying SCFM ratings**

| Size (inch) | SCFM |
|-------------|------|
| 1/8         | 10   |
| 1/4         | 17   |
| 3/8         | 18   |
| 1/2         | 18   |

### High Efficiency Clothes Washer (Electric Water Heater)

Incentives are available for high efficiency commercial clothes washers, which wash more clothes per load than standard clothes washers and use less water and energy. Qualified clothes washers must meet a minimum efficiency of CEE© Tier 2, with a Modified Energy Factor (MEF) ≥ 2.00 and a Water Factor (WF) ≤ 6.00.

## 2010 CUSTOM INCENTIVES WORKSHEET

**Pre-notification is required**

Please attach supporting documentation as described in the Policies and Procedures Manual.

| Energy Cost |          |
|-------------|----------|
| Electricity | (\$/kWh) |
| Gas         | (\$/MCF) |

Please enter your Energy Cost. Do not leave blank.

| Item 1          |                |                    |        |          |
|-----------------|----------------|--------------------|--------|----------|
| Description     |                | Annual kWh Savings | \$/kWh | Subtotal |
| Before Retrofit | After Retrofit |                    |        |          |
|                 |                | Annual MCF Savings | \$0.08 |          |
|                 |                | Measure Cost       | \$/MCF |          |
|                 |                | Payback Period*    | \$5.00 |          |

| Item 2          |                |                    |        |          |
|-----------------|----------------|--------------------|--------|----------|
| Description     |                | Annual kWh Savings | \$/kWh | Subtotal |
| Before Retrofit | After Retrofit |                    |        |          |
|                 |                | Annual MCF Savings | \$0.08 |          |
|                 |                | Measure Cost       | \$/MCF |          |
|                 |                | Payback Period*    | \$5.00 |          |

| Item 3          |                |                    |        |          |
|-----------------|----------------|--------------------|--------|----------|
| Description     |                | Annual kWh Savings | \$/kWh | Subtotal |
| Before Retrofit | After Retrofit |                    |        |          |
|                 |                | Annual MCF Savings | \$0.08 |          |
|                 |                | Measure Cost       | \$/MCF |          |
|                 |                | Payback Period*    | \$5.00 |          |

| Item 4          |                |                    |        |          |
|-----------------|----------------|--------------------|--------|----------|
| Description     |                | Annual kWh Savings | \$/kWh | Subtotal |
| Before Retrofit | After Retrofit |                    |        |          |
|                 |                | Annual MCF Savings | \$0.08 |          |
|                 |                | Measure Cost       | \$/MCF |          |
|                 |                | Payback Period*    | \$5.00 |          |

**Total Custom Project Cost:** \_\_\_\_\_

**Total Custom Incentives\*\*:** \_\_\_\_\_

Note: Customer acknowledges and agrees that Customer cannot apply for, nor receive, incentives for the same product, equipment or service from more than one utility unless there are both electric and gas savings.

\*Payback Period must be greater than or equal to one and less than or equal to eight years to receive the incentive.

\*\*Total Custom Incentives cannot exceed 50 percent of the total custom project cost.

$$\text{Payback period} = \frac{\text{Incremental Measure Cost}}{(\text{Annual kWh saved} \times \text{Electricity Rate}) + (\text{Annual MCF saved} \times \text{Gas Rate})}$$

## 2010 CUSTOM SPECIFICATIONS

Custom projects must involve a facility improvement that results in a permanent reduction in electrical (kWh) and/or natural gas energy usage (MCF) because of an increase in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a custom incentive. However, projects that involve an automated control technology, such as energy management system programming, may be eligible for an incentive. All equipment purchased for custom projects must be new.

Projects involving measures covered by the prescriptive incentive portion of the program are not eligible for a custom incentive. Applicants have the option to apply for a custom incentive for projects that involve an integrated solution with both prescriptive and custom measures.

**Projects that are NOT eligible for an energy efficiency incentive include the following:**

- Fuel switching (e.g. electric to gas or gas to electric)
- Changes in operational and/or maintenance practices or simple control modifications not involving capital costs
- On-site electricity generation
- Projects that involve peak-shifting (and not kWh savings)
- Renewable energy

Project payback equals the ratio of the project cost divided by the annual energy bill savings. Project payback must be greater than or equal to one year and less than or equal to eight years to be eligible for a custom incentive.

The applicant is required to submit a Pre-notification application for all custom projects while the existing equipment is still in operation in order to allow Consumers Energy the opportunity to verify the existing equipment.

**Requirements for Custom Project Electricity and/or Natural Gas Savings Calculation**

The annual electricity and/or gas savings must be calculated for custom projects using industry accepted engineering algorithms or simulation models. The applicant must estimate the annual electricity and/or gas usage of both the existing and proposed equipment based on the current operation of the facility. If the existing equipment is at the end of its useful life, the applicant must substitute equipment that would meet the applicable federal and local energy codes when calculating the annual energy savings.

The applicant must be able to describe clearly the method used to calculate the savings. The applicant must provide all assumptions used in the calculations and document the source for these assumptions. Consumers Energy will review the submittal. Consumers Energy is solely responsible for the final determination of the annual energy savings to be used in calculating the incentive amount. Consumers Energy may need to conduct inspections both before and after the retrofit projects to verify equipment and operation conditions. Consumers Energy also reserves the right to require specific measurement and verification activities including monitoring both before and after the retrofit and to base the incentive payment on the results of these activities.