

# PECO Smart Ideas for Your Business Smart Equipment Incentives

## General Program Application

July 1, 2009 – May 31, 2011

*Program offered until May 31, 2013, but future year incentive levels subject to change.*

### Follow This Easy Process:

#### Step 1: Verify your Eligibility

- ✓ Applicant must verify that they are a business customer of PECO (commercial, industrial, governmental, institutional, non-profit). Multifamily applicants may also apply, detailed information is posted on [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas).
- ✓ Project must be a *new* facility improvement that results in an improvement in electric energy efficiency (kWh) and/or a permanent reduction in electric energy usage.
- ✓ *All installed equipment must meet or exceed the specifications given in the application* and be installed in facilities served by PECO: Customer must have a valid PECO account number on an eligible PECO non-residential rate.

#### Step 2: Submit Pre-approval Application to Reserve Funds

- ✓ We strongly recommend that you submit a pre-approval application to reserve program funds for your project. Pre-approval is required for some prescriptive measures and for all custom measures. Check the specifications page for details.
- ✓ Fill out the Applicant Information form and the Incentive Worksheet for the measures that you are installing. You may submit the application via mail, fax or e-mail.
- ✓ For some projects, a pre-installation inspection will be required.
- ✓ Incentive funds are reserved for 90 days or longer, so you have 90 days to complete your project and submit your final application. Contact the PECO Smart Ideas team for specific questions regarding funding reservations and extensions.

#### Step 3: Install Equipment or Perform Project Work

- ✓ *Be sure that the equipment installed meets or exceeds the specifications and requirements found on the Specifications page* and installed within the program period.

#### Step 4: Submit Final Application

- ✓ Submit a final application as soon as possible after the project is completed. For projects started after March 1, 2010, submit the final application within 60 days of project completion. The final application is the same form as the pre-approval application. Include the following documentation with your final application: customer/contractor information, a signed final application agreement, itemized invoices, specification, and an updated scope of work.
- ✓ The program team will review your final application. For some projects, a final inspection will be part of the final review.
- ✓ The program team will send incentive checks four to six weeks after final project approval.

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.

#### Email

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

#### Mail

PECO Smart Equipment Incentives  
4377 County Line Road  
Chalfont, PA 18914

#### Fax

1-215-996-3982

If you need assistance, please contact our program hotline

1-888-5-PECO-SAVE  
(1-888-573-2672)

Please visit our website  
[www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas)

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# INCENTIVE APPLICATION CHECKLIST

PRE-APPROVAL APPLICATION	
<b>Required Attachment</b>	
<input type="checkbox"/>	<a href="#">Customer/Contractor Information</a>
<b>Incentives Worksheets (check all that apply)</b>	
<input type="checkbox"/>	<a href="#">Lighting</a>
<input type="checkbox"/>	<a href="#">HVAC</a>
<input type="checkbox"/>	<a href="#">Refrigeration/Food Svc</a>
<input type="checkbox"/>	<a href="#">Motors and VFD</a>
<input type="checkbox"/>	<a href="#">Custom</a>
<input type="checkbox"/>	<a href="#">Technical Assistance</a>
<b>TRM Worksheets (if required)</b>	
<input type="checkbox"/>	Lighting
<input type="checkbox"/>	Motors
<b>Application Date:</b>	_____
<b>Expected Completion Date*:</b>	_____
<small><i>*Project funds will only be reserved for 90 days from date of Reservation.</i></small>	

FINAL APPLICATION	
<b>Required Attachments</b>	
<input type="checkbox"/>	<a href="#">Customer/Contractor Information</a>
<input type="checkbox"/>	<a href="#">Signed Final Application Agreement</a>
<input type="checkbox"/>	Itemized Invoices
<input type="checkbox"/>	Equipment Specifications
<input type="checkbox"/>	Updated scope if project changed
<b>Incentives Worksheets (check all that apply)</b>	
<input type="checkbox"/>	<a href="#">Lighting</a>
<input type="checkbox"/>	<a href="#">HVAC</a>
<input type="checkbox"/>	<a href="#">Refrigeration/Food Svc</a>
<input type="checkbox"/>	<a href="#">Motors and VFD</a>
<input type="checkbox"/>	<a href="#">Custom</a>
<input type="checkbox"/>	<a href="#">Technical Assistance</a>
<b>TRM Worksheets (if required)</b>	
<input type="checkbox"/>	Lighting
<input type="checkbox"/>	Motors
<b>Application Date:</b>	_____
<b>Final Completion Date:</b>	_____
<small><i>*Incomplete applications will be rejected and will delay processing and incentive payment.</i></small>	

***Please fill out if this is a revised submittal.***

<b>SUBMITTAL DATE:</b>	_____
<b>APPLICATION NUMBER (IF KNOWN):</b>	_____

**PECO Smart Equipment Incentives**  
**4377 County Line Road**  
**Chalfont, PA 18914**

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 (1-888-573-2672)  
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# TERMS AND CONDITIONS

PECO Energy Company (PECO) is offering prescriptive and custom incentives under the PECO Smart Equipment Incentives program to facilitate the implementation of cost-effective energy efficiency and demand reduction measures for commercial, industrial, governmental, institutional, and non-profit customers. Any and all energy savings or environmental credits generated by the project described in this application will be retained by PECO.

Funds are limited and subject to availability. The program may be modified or terminated without prior notice.

## **Program Effective Dates**

The program is available until May 31, 2013. The first program cycle runs from July 1, 2009, through May 31, 2011 ('Program Year One'). Each subsequent program year cycle ends on May 31<sup>st</sup>. The PECO Smart Equipment Incentives are offered until approved funds are exhausted or until May 15 of each program year, whichever comes first. All PECO Smart Equipment Incentives projects must be completed and final applications received no later than May 15 to be eligible for incentives in that program year. Projects completed on or after July 1, 2009, are eligible for an incentive in Program Year One. Subsequent program year budgets and plans will be made available toward the end of the existing program year.

## **Program and Project Eligibility**

The PECO Smart Equipment Incentives are available for the common energy efficiency measures listed in the worksheets attached to this application. Program incentives are available under the PECO Smart Equipment Incentives program to non-residential customers within PECO's service territory. These incentives are available to all customers who pay into the Energy Efficiency Charge and receive their electricity over PECO's distribution network, regardless of which retail electric supplier from whom the customer has chosen to purchase power. Both small and large multi-family projects also are eligible for incentives under the PECO Smart Equipment Incentives program and must provide their master meter account information and use the Multi-Family Application Form.

Most projects involving energy savings or a permanent load reduction are eligible. Incentives are available for both prescriptive and custom measures. Prescriptive measures are energy efficiency measures with pre-determined savings and incentive levels, and are paid on a unit basis. These measures are listed in the Lighting, HVAC, Refrigeration, and Motors and Drives worksheets of the application. Custom measures include permanent load reduction and energy efficiency measures not listed on the prescriptive application forms. Custom incentives must be approved by PECO in advance, are determined on a case-by-case basis, and are paid per unit of energy (kWh) saved. Examples of projects that are NOT eligible for PECO Smart Equipment Incentives include on-site electricity generation, projects focused primarily on power factor improvement, and renewable energy projects

Installation must be at the customer's facility and provide 100% of the energy benefits as stated in the application for a period of five years or for the life of the product, whichever is less. PECO has the right to claim a pro-rated amount of any incentive paid if the customer is no longer a distribution customer of PECO, or if the customer removes the equipment or systems at any time during the five-year period or the life of the product.

## **Incentive Payment Limits**

Incentives for technical studies are capped at \$10,000 per account per program year, not to exceed \$0.10 per square foot. Prescriptive and custom incentives cannot exceed 100% of the customer's total costs. Incentives for technical assistance cannot exceed 50% of the total project cost. Contractor labor costs can be considered in the total project cost, while customer internal labor costs cannot.

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# TERMS AND CONDITIONS

## Application Review Process

Pre-approval applications are highly recommended for all projects and are required for custom projects and projects that include delamping and new T5/T8 measures. Pre-approval is not a guarantee of program acceptance. Completed applications will be reviewed in the order received. The location or business name on the invoice must be the same as the application information. The incentive is reserved for the project when PECO receives a complete pre-approval application and determines that the project meets the program eligibility requirements. Applicants who submit incomplete applications will be notified of deficiencies upon review of the application, and could lose their place in line in the review process until all requested information is received. Applicants are encouraged to call the program hotline if they have any questions about documentation requirements.

PECO will review final applications for eligibility and completeness. The final application must be submitted within 60 days of project completion. Project documentation, including original dated invoices for the purchase and installation of the measures and/or product specification sheets, is required. Final Applications and all required supporting documentation must be received by May 15<sup>th</sup> of the current program year to be eligible for the current program year's incentives. Final Applications submitted after May 15 are subject to the next Program Year's incentive rates and program rules.

The project invoice must provide sufficient detail to separate the project cost from the cost of other services such as repairs and building code compliance. PECO reserves the right to request additional supporting documentation necessary to ensure measure eligibility and verify that the expected energy savings will occur. Requested information may include, but is not limited to: equipment purchase dates, installation dates, proof that the equipment is operational, manufacturer specifications, warranty information, and proof of customer co-payment. PECO will make every effort to maintain the confidentiality of customer information except that such information must be provided to the PA PUC and its contractor, as well as PECO's contractor for measurement and evaluation.

## Inspections and/or PUC's Statewide Program Evaluation

PECO, its agents, measurement and verification contractor, and/or the PUC statewide program evaluator have the right to audit or 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, interviews, and utility bill data analyses. The customer must allow access to project documents and the facility where the measures were installed for a period of five years after receipt of incentive payment by PECO.

## Requirements for Custom Project Electricity Savings Calculation

The annual electricity savings must be calculated for custom projects using industry accepted engineering algorithms or simulation models. The applicant must estimate the annual electricity 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 rated useful life, the applicant must substitute equipment that would meet the applicable federal and local energy codes as the baseline when calculating the annual energy savings. The applicant must be able to clearly describe the method used to calculate the savings. The applicant must provide all assumptions used in the calculations and document the source for these assumptions. Further information on custom measures can be found in the Policies and Procedures Manual, which can be downloaded from [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas).

The method and assumptions used by the applicant to calculate the annual savings will be reviewed by PECO. PECO has sole and final determination of the annual energy savings to be used in calculating the incentive amount. PECO 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.

PECO may need to conduct inspections both before and after the retrofit projects to verify equipment and operation conditions. If a pre-approval application is necessary, it should be submitted while the existing equipment is still in operation in order to allow PECO the opportunity to view the existing equipment.

## Tax Liability

Incentives may be taxable for most taxpayers. If the incentive is more than \$600, it will be reported to the IRS and the customer will be provided with an IRS form 1099, unless the customer is exempt. PECO is not responsible for any tax liability that may be imposed on any customer as a result of the payment of program incentives. All customers must supply their Federal Tax Identification number to PECO in order to receive a Program Incentive. Please consult with your tax professional for information on the tax treatment of the incentives.

## No Endorsement

PECO does not endorse, support or recommend any particular manufacturer, product or system design in promoting this program and PECO does not guarantee any the specific level of energy savings with respect to any product, system design or energy efficiency measure.

# TERMS AND CONDITIONS

## **Warranties**

PECO DOES NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

## **Limitation of Liability**

By virtue of participating in this program, customers agree to waive any and all claims or damages against PECO, except the receipt of the program incentive, if eligible. Participating Customers agree that PECO's liability, in connection with this program, is limited to paying the program incentive specified. Under no circumstances shall PECO, its representatives, agents or subcontractors, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this program.

## **Assignment**

Customers may assign program incentive payments to a specified vendor.

## **Customer's Certification**

Customer certifies that he/she purchased and installed the equipment listed in the application. Customer agrees that all information is true and that he/she has conformed to all of the program and equipment requirements listed in the application.

## **Termination**

PECO reserves the right to extend, modify (this includes modification of program incentive levels) or terminate this program without prior or further notice.

## **Acknowledgement**

I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give PECO permission to share my records with the Pennsylvania PUC, and agents, representatives and contractors it selects to manage, coordinate or evaluate the program. Additionally, I hereby authorize PECO to have reasonable access to my property to inspect the installation and performance of the equipment and installations that are eligible for incentives under the guidelines of the program.

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# 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

<b>Primary Building Type (select one)</b> OFFICE BUILDING <input type="checkbox"/> LARGE RETAIL (> 10,000 SQUARE FT) <input type="checkbox"/> SMALL RETAIL <input type="checkbox"/> GROCERY <input type="checkbox"/> RESTAURANT (FAST FOOD) <input type="checkbox"/> RESTAURANT (FULL SERVICE) <input type="checkbox"/> LODGING <input type="checkbox"/> HOSPITAL/HEALTH CARE <input type="checkbox"/> MEDICAL OFFICE / CLINIC <input type="checkbox"/> EDUCATION (K-12) <input type="checkbox"/> EDUCATION (COLLEGE/UNIVERSITY) <input type="checkbox"/> ASSEMBLY/MEETING <input type="checkbox"/> INDUSTRIAL/MANUFACTURING <input type="checkbox"/> WAREHOUSE/STORAGE <input type="checkbox"/> REFRIGERATED WAREHOUSE <input type="checkbox"/> STREET/TRAFFIC LIGHTS <input type="checkbox"/> MULTI-FAMILY/MULTI-RESIDENCE <input type="checkbox"/> OTHER <input type="checkbox"/>		<b>Tax Status (as entered on W9)</b> Corporation (Inc., PC, Etc.) <input type="checkbox"/> Tax Exempt <input type="checkbox"/> Individual <input type="checkbox"/> Other (may receive 1099) <input type="checkbox"/> _____ (describe other)	
<b>Business Type (select one)</b> COMMERCIAL/INDUSTRIAL <input type="checkbox"/> GOVERNMENT/MUNICIPAL <input type="checkbox"/> SCHOOL <input type="checkbox"/> NON-PROFIT <input type="checkbox"/> OTHER <input type="checkbox"/>		<b>Project Type</b> Retrofit <input type="checkbox"/> New Construction <input type="checkbox"/> SQUARE FOOTAGE OF BUILDING(S) AFFECTED BY THIS PROJECT _____	

NAME OF PECO ACCOUNT MANAGER (IF KNOWN)			
NAME OF APPLICANT'S BUSINESS		PROJECT NAME (IF APPLICABLE)	
NAME AS IT APPEARS ON PECO BILL	PECO ACCT #*	APPLICANT TAXPAYER ID # (SSN/FEIN)	
MAILING ADDRESS	CITY	STATE	ZIP
INSTALLATION ADDRESS	CITY	STATE	ZIP
<b>As an eligible customer, I verify the information is correct and request consideration for participation under this program.</b>			
CUSTOMER SIGNATURE (PECO CUSTOMER)		PRINT NAME	
TOTAL INCENTIVE REQUESTED**		DATE	

## CUSTOMER CONTACTS

Please provide all contacts we may need to process for this project. The business contact should be the project decision maker.

BUSINESS CONTACT			
NAME OF CONTACT PERSON			TITLE
CONTACT PHONE #	EXTENSION	CONTACT FAX #	CONTACT EMAIL ADDRESS
TECHNICAL CONTACT			
NAME OF CONTACT PERSON			TITLE
CONTACT PHONE #	EXTENSION	CONTACT FAX #	CONTACT EMAIL ADDRESS
ADMINISTRATIVE CONTACT			
NAME OF CONTACT PERSON			TITLE
CONTACT PHONE #	EXTENSION	CONTACT FAX #	CONTACT EMAIL ADDRESS
SITE CONTACT			
NAME OF CONTACT PERSON			TITLE
CONTACT PHONE #	EXTENSION	CONTACT FAX #	CONTACT EMAIL ADDRESS

## CONTRACTOR INFORMATION

NAME OF CONTRACTING COMPANY			
NAME OF CONTACT PERSON			TITLE OF CONTACT PERSON
CONTACT PHONE #	EXTENSION	CONTACT FAX #	CONTACT EMAIL ADDRESS
MAILING ADDRESS	CITY	STATE	ZIP

\* PECO Account Number where measure is installed

\*\* Incentive cannot exceed 100 percent of the total project cost and must meet all program terms and conditions.



# FINAL APPLICATION AGREEMENT

## COMPLETION NOTICE AND FINAL INCENTIVE REQUEST

TOTAL PROJECT COST		TOTAL INCENTIVES REQUESTED
CUSTOMER SIGNATURE (PECO CUSTOMER)		
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. SIGNED APPLICATIONS RECEIVED BY FAX OR EMAIL WILL BE TREATED THE SAME AS ORIGINAL APPLICATIONS RECEIVED BY MAIL.

## PAYMENT RELEASE AUTHORIZATION (OPTIONAL)

Customers may assign program incentive payments to a specified vendor. Complete this section ONLY if incentive payment is to be paid to an entity other than the PECO customer listed on the Applicant Information page.

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 from PECO. 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 and Terms & Conditions.

**Authorized by:**

CUSTOMER SIGNATURE (PECO CUSTOMER)	PRINT NAME	DATE
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**Check should be made payable to:**

PAYEE: COMPANY/INDIVIDUAL NAME

MAILING ADDRESS

CITY	STATE	ZIP
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CONTACT PHONE NUMBER

TAXPAYER ID # (SSN/FEIN OF PAYEE)	TAX STATUS Corporation (Inc., PC, Etc.), Tax Exempt, Individual, Other (May receive 1099)
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# FINAL APPLICATION AGREEMENT

As an eligible PECO non-residential customer, I certify that work was completed on this project on or after July 1, 2009. The energy efficiency measures are for use in my non-residential facility and not for resale. Project documentation, including product specification sheets, and copies of dated invoices for the purchase and installation of the measures, is attached. I have attached any other documentation requirements as detailed in the Policy and Procedures Manual found at [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas), or requested of me by the program team. Final applications and all documentation should be received by May 15, 2011, to be considered for the first program period.

I understand that the location or business name on the invoice must be consistent with the application information. I agree to verification by the utility or its representatives of both sales transactions and equipment installation.

I certify that the information on this application is true and correct, and that the Taxpayer ID Number and tax status is the applicant's. I understand that incentives over \$600 will be reported to the IRS unless the applicant submits appropriate exemption documentation.

I agree that if: (1) I do not install the related product(s) identified in my application, or (2) I remove the related product(s) identified in my application before a period of five years or the end of the product life, whichever is less, then I shall refund a prorated amount of incentive funds to PECO based on the actual period of time in which the related product(s) were installed and operating (or the full amount if the product was never installed). Any measure that I have installed in my facility must provide 100% of the energy benefits as stated in this application for a period of five years, or for the life of the product, whichever is less. I understand that this is necessary to assure that the project's related energy benefits will be achieved.

I understand that the program may be modified or terminated without prior notice.

For projects started after March 1, 2010, I understand that the final application and all required documentation must be received by the PECO Smart Equipment Incentives program within 60 days of project completion and that all equipment must be purchased and installed prior to submitting the final application.

I understand that this project must involve a facility improvement that results in improved energy efficiency and/or a permanent reduction in energy usage. I also understand that all materials removed, including lamps and PCB ballasts, must be permanently taken out of service and disposed of in accordance with all laws, including local codes and ordinances. I understand it is my responsibility to be aware of any applicable codes or ordinances, and that information about hazardous waste disposal can be found at: [www.epa.gov/epawaste/hazard/index.htm](http://www.epa.gov/epawaste/hazard/index.htm).

I understand that in no case will PECO pay more than 100% of the total costs of the project, and 50% of the total technical assistance cost. I understand that PECO or its representatives have the right to ask for additional information at any time, and that the PECO Smart Equipment Incentives program will make the final determination of incentive levels for this project.

Due to the program's limited budget, I understand that applications will be processed until allocated funds are reserved or spent.

I understand that my company may be recognized as a program participant in promotional materials; however, project details will not be released to the public without prior consent. If I choose to opt-out of any recognition, I will indicate my choice in a written letter to the PECO Smart Equipment Incentives team at 4377 County Line Road, Chalfont, PA 18914, or via email to [pecosmartideas@kema.com](mailto:pecosmartideas@kema.com).

I understand that PECO does not guarantee the energy savings and does not make any warranties associated with the measures eligible for incentives under this program, and further, that PECO 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 understand that in the event the application was pre-approved and funds were reserved based upon the application, such pre-approval or reservation, including the specific dollar amount of reservation, did not represent a guarantee that such funds will be paid. Payment of incentives is based upon the final application and program terms and conditions, as well as the availability of funds. I have read and accept the PECO Smart Equipment Incentives Terms and Conditions as they appear in this application.

# INTERIOR LIGHTING INCENTIVES WORKSHEET

Equipment Type	Incentive	Unit	# of Units	Incentive Calculated			
<b>Interior Compact Fluorescent Lamps, Screw-in</b>							
CFL - Screw-in (30W or Less)	\$1.50	Lamp					
CFL - Screw-in (31W - 115W)	\$6.00	Lamp					
CFL - Downlight, Dimmable or 3-way	\$6.00	Lamp					
<b>Interior Hardwired Compact Fluorescent Fixtures</b>							
29W or Less	\$30.00	Fixture					
30W or Greater	\$55.00	Fixture					
<b>Interior Permanent Lamp Removal (Pre-Approval Application Is Required)</b>							
2-ft Lamp	\$7.50	Lamp removed					
3-ft Lamp	\$7.50	Lamp removed					
4-ft Lamp	\$7.50	Lamp removed					
8-ft Lamp	\$12.50	Lamp removed					
<b>Interior High Performance or Reduced Wattage 4 - Foot T8</b>							
4-ft Lamp and Ballast	\$7.00	Lamp					
4-ft Reduced Watt Lamp Only	\$1.00	Lamp					
8-ft 1-Lamp T12 to 4-ft 2-Lamp HP T8	\$5.00	4-foot Lamp					
<b>Interior Reduced Wattage 8-Foot T8</b>							
8-ft Lamp and Ballast	\$9.00	Lamp					
8-ft Lamp Only	\$1.00	Lamp					
<b>Interior Standard Linear Fluorescent Retrofit (T12 to T8/T5)</b>							
2-ft T12 to T8 or T5	\$5.00	Lamp					
3-ft T12 to T8 or T5	\$5.00	Lamp					
4-ft T12 to T8 or T5 - Includes U lamps	\$4.00	Lamp					
8-ft T12 to 4-ft 2-Lamp T8 or T5	\$3.00	4-foot Lamp					
<b>Interior LED Lighting</b>							
LED Lamp/Fixture, 18W or Less	\$15.00	Lamp/Fixture					
LED, T-1, or Electroluminescent Exit Signs	\$25.00	Signs					
LED Open Sign	\$40.00	Signs					
LED Channel Sign ≤ 2 feet Interior	\$15.00	Letter					
LED Channel Sign > 2 feet Interior	\$45.00	Letter					
<b>Interior Metal Halide</b>							
Integrated Ballast Ceramic Metal Halide Lamp	\$15.00	Lamp					
Pulse Start or Ceramic, 100W or Less	\$20.00	Fixture					
Pulse Start or Ceramic, 101W - 200W	\$30.00	Fixture					
Pulse Start or Ceramic, 201W - 350W	\$50.00	Fixture					
<b>Interior Induction Lighting</b>							
Interior Induction Fixture	\$30.00	Fixture					
<b>Interior Cold Cathode</b>							
Cold Cathode	\$4.00	Lamp					
<b>Interior Controls</b>							
Occupancy Sensors	\$0.10	Watts Controlled					
Central Lighting Controls	\$0.09	Watts Controlled					
Daylight Sensor Controls	\$0.12	Watts Controlled					
Bi-Level Stairwell/Hall/Garage Fixtures w/ integrated sensors	\$30.00	Fixture					
<b>Conversion to New Interior T8/T5 Fluorescent Fixtures with Electronic Ballast (Pre-Approval Application is Required)</b>							
<b>New fixtures are capped at \$100 per fixture</b>							
Brief Project Description (include quantity and fixture wattages) or attach an itemized project plan.	Pre		Post		Total Watts Reduced	Incentive	Calculated Incentive
	# of Fixtures	Watts/Fixture	# of Fixtures	Watts/Fixture			
<b>New Fixture Quantity:</b>				<b>Sub Total:</b>			
<b>Total Interior Lighting Incentives:</b>							

# EXTERIOR LIGHTING INCENTIVES WORKSHEET

Equipment Type	Incentive	Unit	# of Units	Incentive Calculated			
<b>Exterior Compact Fluorescent Lamps, Screw-in</b>							
Screw-in CFLs > 31W	\$15.00	Lamp					
<b>Exterior LED Lighting</b>							
LED Channel Sign ≤ 2 feet Outdoor	\$10.00	Letter					
LED Channel Sign > 2 feet Outdoor	\$25.00	Letter					
<b>LED Traffic and Pedestrian Lights</b>							
LED traffic lights - Green 8"	\$48.00	Lamp					
LED traffic lights - Green 12"	\$52.00	Lamp					
LED traffic lights - Yellow 8"	\$48.00	Lamp					
LED traffic lights - Yellow 12"	\$52.00	Lamp					
LED traffic lights - Red 8"	\$48.00	Lamp					
LED traffic lights - Red 12"	\$52.00	Lamp					
LED traffic lights - Walk/Don't Walk or Arrow - 9"	\$48.00	Lamp					
LED traffic lights - Walk/Don't Walk or Arrow - 12"	\$52.00	Lamp					
<b>Streetlights and Exterior Fixtures</b>							
Metal Halide or High Pressure Sodium Fixture replacing Incandescent or Mercury Vapor Fixture	\$50.00	Fixture					
Pulse Start or Ceramic Metal Halides (350W - 400W) replacing 'Standard' Probe-Start HID	\$50.00	Fixture					
LED or Induction replacing 175W or Less HID	\$45.00	Fixture					
LED or Induction replacing 176W - 250W HID	\$65.00	Fixture					
LED or Induction replacing 251W - 400W HID	\$120.00	Fixture					
<b>Exterior Bi-Level Fixtures</b>							
Bi-Level Parking Lot Fixture	\$150.00	Fixture					
Bi-Level Wall Pack Fixture	\$180.00	Fixture					
<b>Exterior Lighting Bi-Level Control with Override</b>							
Exterior Lighting Bi-Level Control w/ Override 150W -1000W HID	\$60.00	Fixture					
<b>Conversion to New Exterior T8/T5 Fluorescent Fixtures with Electronic Ballast (Pre-Approval Application is Required)</b>							
<b>New fixtures are capped at \$100 per fixture</b>							
Brief Project Description (include quantity and fixture wattages) or attach an itemized project plan.	Pre		Post		Total Watts Reduced	Incentive	Un-capped Calculated Incentive
	# of Fixtures	Watts/Fixture	# of Fixtures	Watts/Fixture			
New Fixture Quantity:					Capped Sub Total:		

**Total Exterior Lighting Incentives:** \_\_\_\_\_



# GARAGE LIGHTING INCENTIVES WORKSHEET

Equipment Type	Incentive	Unit	# of Units	Incentive Calculated			
<b>Interior Parking Garage Application (24-Hour Operation)</b>							
LED or Induction replacing 175W or Less HID	\$75.00	Fixture					
LED or Induction replacing 176W - 250W HID	\$100.00	Fixture					
LED or Induction replacing 251W - 400W HID	\$150.00	Fixture					
Interior Screw-in CFLs > 31W	\$20.00	Fixture					
Interior Metal Halides (Pulse start or Ceramic) 350W - 400W	\$100.00	Fixture					
<b>Exterior Parking Garage Application (Nights/12-Hour Operation)</b>							
LED or Induction replacing 175W or Less HID	\$45.00	Fixture					
LED or Induction replacing 176W - 250W HID	\$65.00	Fixture					
LED or Induction replacing 251W - 400W HID	\$120.00	Fixture					
Exterior Screw-in CFLs > 31W	\$15.00	Lamp					
Exterior Metal Halides (Pulse start or Ceramic) 350W - 400W	\$50.00	Fixture					
<b>Conversion to New Interior Parking Garage T8/T5 Fluorescent Fixtures with Electronic Ballast (Pre-Approval Application is Required)</b>							
<b>New fixtures are capped at \$100 per fixture</b>							
Brief Project Description (include quantity and fixture wattages) or attach an itemized project plan.	Pre		Post		Total Watts Reduced	Incentive	Un-capped Calculated Incentive
	# of Fixtures	Watts/Fixture	# of Fixtures	Watts/Fixture			
<b>New Fixture Quantity:</b>				<b>Capped Sub Total:</b>			
<b>Total Garage Lighting Incentives:</b>							

# 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.

The Pennsylvania Public Utilities Commission requires that projects with savings greater than 20 kW complete a detailed lighting inventory with pre- and post-light fixture codes, wattages, and site-specific estimates of operating hours. The worksheet must be submitted in an Excel-readable electronic format. An Excel version of the worksheet is available at [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas).

## **Interior Compact Fluorescent Lamps, Screw-In (30W or Less)**

Screw-in CFLs must be ENERGY STAR® rated lamps or meet ENERGY STAR® criteria. The lamps must have a minimum luminous efficacy of 50 lumens per watt (LPW).

## **Interior Compact Fluorescent Lamps, Screw-In (31W – 115W)**

High wattage CFLs must replace existing incandescent lamps. The lamp must have a minimum luminous efficacy of 65 lumens per watt (LPW).

## **Interior Compact Fluorescent Lamps, Screw-In (Downlight, Dimmable or 3-way)**

Must replace existing incandescent lamps, metal halide or induction lamps, or other non-CFL with Specialty CFLs such as PAR, 3-way, dimmable. The lamps must qualify under ENERGY STAR® criteria, if applicable for the type of lamp.

## **Interior Hardwired Compact Fluorescent Fixtures**

For interior hardwired CFL fixtures, only complete new fixtures or modular hardwired retrofits with hardwired electronic ballasts qualify. The CFL ballast must be programmed start or programmed rapid start with a power factor (PF)  $\geq 0.90$  and a total harmonic distortion (THD)  $\leq 20\%$ . Screw-in CFLs are not eligible for this incentive.

## **Interior Permanent Lamp Removal (Pre-Approval Application is Required)**

Incentives are offered for the permanent removal of existing fluorescent lamps. Permanent lamp removal is the net reduction in the quantity of lamps. Customers are responsible for determining whether or not to use reflectors in combination with lamp removal in order to maintain adequate lighting levels. Lighting levels are required to meet the Illuminating Engineering Society of North America (IESNA) recommended light levels for the occupancy and use. U tube lamps are eligible for this measure and will be considered as a 4-foot lamp. Unused lamps, lamp holders, and ballasts must be permanently removed from the fixture and disposed of in accordance with local regulations. This measure is applicable when retrofitting from T12 lamps to T8 lamps or reconfiguring a T8 fixture to reduce the number of lamps. Removing lamps from a T12 fixture that is not being retrofitted with T8 lamps are not eligible for this incentive. A **pre-approval application** is required for lamp removal projects in order for PECO to conduct a pre-retrofit inspection.

## **Interior High Performance or Reduced Wattage 4-foot T8 Lamps and Ballasts**

This measure consists of replacing existing T12 lamps and magnetic ballasts with high performance T8 lamps or reduced wattage (28W or 25W) 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 the table below. A list of qualified lamps and ballasts can be found at: <http://www.cee1.org/com/com-It/com-It-main.php3>. Both the lamp and ballast must meet the specification in order to qualify for an incentive. Incentives for this measure are calculated per number of lamps installed. A manufacturer's specification sheet for the specific lamp and ballast installed must accompany the application.

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# LIGHTING SPECIFICATIONS

**Table 1. High Performance 4-foot T-8 Lamps and Ballasts**

Performance Characteristics for Systems				
Mean System Efficacy	≥ 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 ≥ 2900 Mean Lumens			
Performance Characteristics for Ballasts				
Ballast Efficacy Factor (BEF) 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.

**Table 2. Reduced Wattage 4-Foot Lamps and Ballasts**

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

1 Lamps ≥ 4500 K and/or 24000 hours have a system efficacy 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 Efficacy Factor when operated on at least one of the intended operating voltages

# LIGHTING SPECIFICATIONS

## **Interior High Performance or Reduced Wattage 4-foot T8 Lamp Only**

Incentives are offered for replacing 32 Watt T8 lamps with reduced wattage T8 lamps when an electronic ballast is already present. The lamps must be reduced wattage and meet the Consortium for Energy Efficiency (CEE) specification ([www.cee1.org](http://www.cee1.org)). Qualified products can be found at: <http://www.cee1.org/com/com-lt/com-lt-main.php3>. The nominal wattage of the new lamp must be 28W ( $\geq 2585$  Lumens) or 25W ( $\geq 2400$  Lumens) to qualify. The mean system efficacy must be  $\geq 90$  MLPW, CRI  $\geq 80$ , and lumen maintenance at 94 percent. A manufacturer's specification sheet must accompany the application.

## **Interior Reduced Wattage 8-foot T8 Lamps and Ballasts**

Eight-foot lamps must have a minimum MLPW of 90 and must have a nominal wattage of less than or equal to 57 W. A manufacturer's specification sheet must accompany the application. Retrofits involving eight-foot lamps with a nominal wattage of greater than 57 W will be considered on a custom basis.

## **Interior Standard Linear Fluorescent Retrofit (T12 to T8/T5)**

Incentives are offered 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)  $\geq 80$ . The electronic ballast must be high frequency ( $\geq 20$  kHz), UL listed, and warranted against defects for a minimum of 5 years. Ballasts must have a power factor (PF)  $\geq 0.90$ . Ballasts for 4-foot lamps must have total harmonic discharge (THD)  $\leq 20$  percent at full power output. For 2 and 3-foot lamps, ballasts must have THD  $\leq 32$  percent at full light output. A manufacturer's specification sheet for the specific lamp and ballast installed must accompany the application. Incentive is also available for 4-foot U-tube T8 or T5 lamps and CEE qualified ballasts replacing existing U-tube T12 lamps and magnetic ballasts. The lamp must have a color rendering index (CRI)  $\geq 80$ .

## **Interior LED Lamp/Fixture**

Incentives are offered for LED recessed downlight luminaires up to 18 Watts or screw-in base lamps. The LED recessed downlight must have a minimum efficacy of 35 lumens per Watt. The product must meet ENERGY STAR® version 1.1 criteria. LED lamps with ANSI sockets will qualify based on the July, 2009 ENERGY STAR® specification. See [www.energystar.gov](http://www.energystar.gov) for more information. LED lamps and downlight luminaires over 18 Watts may qualify for custom incentives.

## **Interior LED, T-1, or Electroluminescent Exit Signs**

Incentives are offered for high-efficiency exit signs. New LED lamps must replace or retrofit an existing incandescent or fluorescent 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 an input wattage  $\leq 5$  Watts per face or be ENERGY STAR® qualified.

## **Interior LED "Open" Sign**

Incentives are offered for LED "open" signs. New signs must replace an existing neon "open" sign. Replacement signs cannot use more than 20% of the actual input power of the sign that is replaced. LED drivers can be either electronic switching or linear magnetic, with the electronic switching supplies being the most efficient. The on-off power switch may be found on either the power line or load side of the driver, with the line side location providing significantly lower standby losses when the sign is turned off and is not operating.

## **Interior LED Channel Signs**

Incentives are offered for LED channel signs that retrofit or replace incandescent, HID, argon-mercury or neon-lighted channel letter signs. Replacement signs cannot use more than 20% of the actual input power of the sign that is replaced. Maximum letter height determines incentive category.

## **Interior Integrated Ballast Ceramic Metal Halide Lamps**

Qualifying lamps are 25 watts or less integrated ballast ceramic metal halide PAR lamps with a rated life of 10,500 hours or greater.

# LIGHTING SPECIFICATIONS

## Interior Metal Halide Fixtures — Pulse Start or Ceramic

Incentives are offered for retrofits with either pulse start metal halide or ceramic metal halide fixtures that replace existing “standard” probe-start high intensity discharge lamps and ballasts. Total replacement wattage must be lower than existing wattage to ensure energy savings. This measure is subject to possible pre-inspection. Retrofit kits must be used on existing mercury vapor, standard metal halide or high pressure sodium fixtures only. No new fixtures are allowed.

## Interior Induction Lighting

Incentives are offered for interior induction lighting. Only new, hard-wired induction fixtures qualify. New fixtures must replace, one for one, existing incandescent, mercury vapor, T12/High Output fluorescent, T12/Very High Output fluorescent, Standard Metal Halide, or High Pressure Sodium fixtures in interior installations. The new fixtures must not exceed the maximum Wattage listed in the table below for each range of lamp Wattage being replaced.

**Table 3. Interior Induction Lighting Wattages**

Basecase Wattage	Replacement Fixture Wattage (Maximum)
≥ 400 Watt	360W
76-399 Watt	180W
101-175 Watt	160W
≤100 Watt	95W

## Interior Cold Cathode

All Cold Cathode Fluorescent Lamps (CCFLs) must replace incandescent lamps that are between 10 and 40 Watts. Cold cathode lamps may be medium (Edison) or candelabra base. Product must be rated for at least 18,000 average life hours.

## Interior Occupancy Sensors

Passive infrared, ultrasonic detectors and fixture-integrated sensors or sensors with a combination sensor are eligible. All sensors must be hard-wired and control interior lighting fixtures. The incentive is per Watt controlled. An inventory of the controlled fixtures and their wattage must be provided for each sensor must be provided with the Final Application.

## Interior Central Lighting Controls

Incentives are offered for automated central lighting control systems with override capabilities. The occupants' schedule of operation must be taken into consideration when programming the system. Systems can be timed, with override, or “sweep” with override type. 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. Energy savings are maximized by integrating other systems such as security systems that detect employee keycards and can turn on or off lighting in office areas accordingly. The incentive is calculated per watt of lighting controlled.

# LIGHTING SPECIFICATIONS

## **Interior Daylight Sensor Controls**

Incentives are offered for daylight sensor controls in spaces with suitable available ambient light for at least part of the day. Light may be through skylights, clerestories, windows or "light tubes". 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% when the interior illuminance levels reach 50% of the desired lighting levels. Continuous or dimming controllers dim artificial lighting proportional to the available ambient light. All types of daylight sensor controls are required to be commissioned in order to ensure proper sensor calibration and energy savings. Incentives are per watt controlled.

## **Interior Bi-Level Stairwell/Hall/Garage Fixtures with Integrated Sensors**

Incentives are offered for hardwired two-lamp T8 fluorescent fixtures with electronic ballasts and manufacturer integrated occupancy sensors used in areas where lighting operates 24 hours a day (such as stairwells, halls, and garages). Fixtures with manual override capabilities are not eligible. During occupied periods, the fixture should operate at full light output. During unoccupied periods, the fixture should operate at lower light output and wattage. This measure is not also eligible for the occupancy sensor incentive.

## **Conversion to New Interior T8 /T5 Fluorescent Fixtures (Pre-Approval Application is Required)**

This measure consists of replacing one or more existing HID fixtures with new fixtures containing T8 or T5 lamps and electronic ballasts. The T8 or T5 lamps must have a color rendering index (CRI)  $\geq 80$ . The electronic ballast must be high frequency ( $\geq 20$  kHz), NRTL listed, and warranted against defects for five years. Ballasts must have a power factor (PF)  $\geq 0.90$ . Ballasts for 4-foot lamps must have total harmonic distortion (THD)  $\leq 20\%$  at full light output. For 2-foot and 3-foot lamps, ballasts must have THD  $\leq 32\%$  at full light output. High output T5/T8 lamps also qualify for this rebate. 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.

## **Exterior Compact Fluorescent Lamps, Screw-in (> 31W)**

This incentive applies to screw-in lamps and applies only if an incandescent or high-intensity discharge (HID) lamp is being replaced. Lamp/ballast combination must have an efficacy  $\geq 40$  lumens per Watt (LPW).

## **Exterior LED Channel Sign**

Incentives are offered for LED channel signs that retrofit or replace incandescent, HID, argon-mercury or neon-lighted channel letter signs. Replacement signs cannot use more than 20% of the actual input power of the sign that is replaced. Maximum letter height determines incentive category.

## **LED Traffic and Pedestrian Lights**

Incentives are offered 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.

## **Streetlights and Exterior Fixtures**

Incentives are offered to replace incandescent or mercury vapor fixtures with high pressure sodium or metal halide fixtures. The total wattage of the installed fixture must be lower than the replaced fixture wattage.

# LIGHTING SPECIFICATIONS

## **Streetlights — Pulse Start or Ceramic Metal Halide Fixtures**

Incentives are offered for retrofits with either pulse start metal halide or ceramic metal halide fixtures that replace existing “standard” probe-start high intensity discharge lamps and ballasts. Total replacement wattage must be lower than existing wattage to ensure energy savings. This measure is subject to possible pre-inspection. Retrofit kits must be used on existing mercury vapor, standard metal halide or high pressure sodium fixtures only. No new fixtures are allowed.

## **Exterior HID to LED/Induction Lighting Retrofit**

Incentives are offered for replacing existing exterior high intensity discharge or incandescent outdoor light fixtures with LED or Induction fixtures. Existing fixtures must operate > 3,833 hours per year (> 10.5 hours per day). Fixture replacement must result in at least a 30% power reduction. LED fixtures must have a minimum efficacy of 35 lumens per watt. Eligible applications include pole-mounted, or canopy lighting and wall-packs. This incentive can be combined with incentives for exterior/garage bi-level control. Incentive is per fixture.

## **Exterior Bi-Level Parking Lot Fixtures**

Incentives are available for exterior two-level parking lot fixtures. The new fixture must be integrated with occupancy sensor that allows the light to switch between high and low levels based on the presence of vehicle or pedestrian traffic. Switching between high and low light levels based on occupancy maintains sufficient light for security and way-finding while maximizing energy savings. The new fixture must be pulse start metal halide, induction, or LED and have lower nominal wattage than the existing fixture. This measure cannot be installed in conjunction with an HID to LED retrofit. Incentive is per fixture.

## **Exterior Bi-Level Wallpack Fixtures**

Bi-level wallpack fixtures are typically found in stairwells and garages. These fixtures are intended for use in areas where high lighting levels are required when occupied, but are actually unoccupied for the majority of the time. These fixtures employ a motion sensor-type lighting switch to provide lower levels of light while unoccupied, and full illumination while occupied. Incentive is per fixture.

## **Exterior 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% 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.

## **Conversion to New Exterior T8/T5 Fluorescent Fixtures with Electronic Ballast (Pre-Approval Application is Required)**

Incentives are offered for replacing one or more existing fixtures with new fixtures containing T8 or T5 lamps and electronic ballasts. The T8 or T5 lamps must have a color rendering index (CRI)  $\geq 80$ . The electronic ballast must be high frequency ( $\geq 20$  kHz), UL listed, and warranted against defects for 5 years. Ballasts must have a power factor (PF)  $\geq 0.90$ . Ballasts for 4-foot lamps must have total harmonic distortion (THD)  $\leq 20\%$  at full light output. For 2- and 3-foot lamps, ballasts must have THD  $\leq 32\%$  at full light output. High output T5/T8 lamps also qualify for this rebate. This incentive can be used in highbay and lowbay fluorescent applications.

Incentives for this measure are calculated based on the reduction in connected watts. **A Pre-approval Application is required** for this measure in order for PECO to conduct a pre-retrofit inspection. Specifications of the new fixtures, lamps and ballasts, must accompany the final application. Incentives are only available for new fixtures and the maximum incentive amount is \$100 per fixture. Retrofit kits are not considered to be new fixtures.

**Note:** PCB ballasts and lamps are hazardous materials and must be disposed of properly by the Applicant.

## LIGHTING SPECIFICATIONS

### **Interior Parking Garage HID to LED/Induction Lighting Retrofit**

Incentives are available in garage applications for replacing existing high intensity discharge fixtures with LED or Induction fixtures. Fixture replacement must result in at least a 40% power reduction. LED fixtures should have a minimum efficacy of 35 lumens per watt. Applications include canopy lighting and wallpacks. 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.

### **Parking Garage High Wattage Screw-in CFLs (Interior and Exterior)**

This incentive applies to screw-in lamps and applies only if an incandescent or high-intensity discharge (HID) lamp is being replaced. Lamp/ballast combination must have an efficacy  $\geq 40$  lumens per Watt (LPW). This measure applies to 24-hour, 12-hour, or night-only applications if the lights are located in an exterior parking garage structure.

### **Parking Garage Metal Halide Fixtures — Pulse Start or Ceramic (Interior and Exterior)**

Incentives are offered for retrofits with either pulse start metal halide or ceramic metal halide fixtures that replace existing "standard" probe-start high intensity discharge lamps and ballasts. Total replacement wattage must be lower than existing wattage to ensure energy savings. This measure is subject to possible pre-inspection. Retrofit kits must be used on existing mercury vapor, standard metal halide or high pressure sodium fixtures only. No new fixtures are allowed. This measure applies to 24-hour, 12-hour, or night-only applications if the lights are located in an exterior parking garage structure.

### **Conversion to New Interior Parking Garage T8/T5 Fluorescent Fixtures with Electronic Ballast (Pre-Approval Application is Required)**

Incentives are offered for replacing one or more existing fixtures with new fixtures containing T8 or T5 lamps and electronic ballasts. The T8 or T5 lamps must have a color rendering index (CRI)  $\geq 80$ . The electronic ballast must be high frequency ( $\geq 20$  kHz), UL listed, and warranted against defects for 5 years. Ballasts must have a power factor (PF)  $\geq 0.90$ . Ballasts for 4-foot lamps must have total harmonic distortion (THD)  $\leq 20\%$  at full light output. For 2- and 3-foot lamps, ballasts must have THD  $\leq 32\%$  at full light output. High output T5/T8 lamps also qualify for this rebate.

This incentive can be used in highbay and lowbay fluorescent applications in interior parking garages, including underground parking structures and also stand alone parking structures that may be semi-enclosed. This measure is not eligible in exterior parking structures, which are outdoor parking lots where light fixtures do not operate during the day.

Incentives for this measure are calculated based on the reduction in connected watts. **A Pre-approval Application is required** for this measure in order for PECO to conduct a pre-retrofit inspection. Specifications of the new fixtures, lamps and ballasts, must accompany the final application. Incentives are only available for new fixtures and the maximum incentive amount is \$100 per fixture. Retrofit kits are not considered to be new fixtures.

**Note:** PCB ballasts and lamps are hazardous materials and must be disposed of properly by the Applicant.

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# HVAC INCENTIVES WORKSHEET

Equipment Type	Size Category	Qualifying Efficiency	Incentive (per ton)
Unitary and Split Air Conditioning Systems and Air Source Heat Pumps	< 65,000 Btu/h (5.4 tons)	14 SEER	\$35.00
		15 SEER	\$45.00
	≥ 65,000 Btu/h and < 120,000 Btu/h (5.5-10 tons)	12 EER* / TBD IEER**	\$25.00
	≥ 120,000 Btu/h and < 240,000 Btu/h (10-20 tons)	12 EER / TBD IEER**	\$45.00
	≥ 240,000 Btu/h and < 760,000 Btu/h (21-63 tons)	10.8* EER / TBD IEER**	\$45.00
	≥ 760,000 Btu/h (> 63 tons)	10.2* EER / TBD IEER**	\$45.00
Water-Cooled Chillers, Centrifugal	≤ 150 tons	Level 1 (see specs)	\$25.00
		Level 2 (see specs)	\$40.00
	>150 tons and ≤ 300 tons	Level 1 (see specs)	\$25.00
		Level 2 (see specs)	\$40.00
	> 300 tons	Level 1 (see specs)	\$10.00
		Level 2 (see specs)	\$20.00
Water-Cooled Chillers, Rotary, Scroll, or Screw	≤ 150 tons	Level 1 (see specs)	\$25.00
		Level 2 (see specs)	\$40.00
	>150 tons and ≤ 300 tons	Level 1 (see specs)	\$25.00
		Level 2 (see specs)	\$40.00
	> 300 tons	Level 1 (see specs)	\$10.00
		Level 2 (see specs)	\$20.00
Water-Cooled Chillers, Reciprocating	ALL	Level 1 (see specs)	\$20.00
		Level 2 (see specs)	\$40.00
Air-Cooled Chillers	ALL	1.04 kW/ton-IPLV	\$30.00
Room Air Conditioners	ALL	See specifications	\$60.00
PTAC/PTHP	ALL	13.08-(0.2556 x Btu/h/1000) EER	\$35.00
Ground Source Heat Pumps, Existing Ground Loop	ALL	EER = 17.0	\$40.00
Ground Source Heat Pumps, New Ground Loop	ALL	EER = 17.0	\$400.00

Equipment Type	Make and Model	Unit Efficiency***	(A) Unit Size (tons)	(B) Quantity	(C) Incentive (per ton)	(A*B*C) Incentive

**Total HVAC Incentives:**

Other HVAC Measures				
Measure	Incentive Unit	Quantity	Incentive/Unit	Incentive
Hotel Guest Room Occupancy Sensor (Electric Heat/AC)	Unit		\$80.00	
Hotel Guest Room Occupancy Sensor (Non-Electric Heat/AC)	Unit		\$30.00	
Energy Management System (EMS), Basic Central Time Control	Square Foot		\$0.10	
EMS, Electric Heat, No Present Central Time Control	Square Foot		\$0.21	

**Total Other HVAC Incentives:**

\*Units with electric resistance heating must have EER values 0.2 higher than the efficiencies listed.  
 \*\*IEER values to become available from CEE end of third quarter 2010  
 \*\*\*Unit efficiency for chillers should be provided in kW per ton – IPLV (IPLV = Integrated Part Load Value). Unit efficiency in AC units less than 65,000 Btu/h should be provided in SEER. Unit efficiency for all other equipment should be provided in EER.



# HVAC SPECIFICATIONS

*Please see Policies & Procedures Manual for more detailed measure 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 Incentives Worksheet are eligible for an incentive. They can 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 under this prescriptive measure, 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). All required efficiencies are based on the Consortium for Energy Efficiency (CEE) high-efficiency commercial air conditioning and heat pump specifications ([www.cee1.org](http://www.cee1.org))<sup>2</sup>. 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.

## Water- and Air-Cooled Chillers

Incentives are offered for chillers with an IPLV value (expressed in kW per ton) that is less than or equal to the qualifying Level 1 or Level 2 efficiency shown in the table below. The chiller efficiency rating must be based on ARI Standard 550/590-2003 for IPLV conditions and not 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 kW/ton-IPLV or COP-IPLV must accompany the application. Qualifying efficiencies for chillers are summarized below.

**Table 4: Efficiency Levels for Chillers**

Chiller Type	Size (Tons)	ASHRAE 90.1-2007* kW/ton IPLV	Level 1 kW/ton IPLV	Level 2 kW/ton IPLV
Centrifugal	< 150	0.67	0.60	0.54
	150 to 300	0.60	0.54	0.48
	≥ 300	0.55	0.49	0.44
Rotary, Scroll, or Screw	< 150	0.68	0.61	0.54
	150 to 300	0.63	0.57	0.50
	≥ 300	0.57	0.51	0.46
Reciprocating	ALL	0.70	0.63	0.56
Air-Cooled	ALL	1.15	1.04	0.92

\* Pre 01/01/2010 values

## Room Air Conditioners

Room air conditioning units are through-the-wall (or built-in) self-contained units that are 2 tons or less. A unit can qualify either under Super Efficient Home Appliance (SEHA) Tier 1 standards shown in the table below (also found at [cee1.org](http://cee1.org)). 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 or without louvered sides, without reverse cycle (i.e., heating), and casement. Disposal of existing unit must comply with local codes and ordinances.

**Table 5: Room A/C Efficiencies**

Size (Btu/h)	Level 2 SEHA Tier 1 (EER)
< 8,000 (< 0.67 tons)	11.2
8,000 – 13,999 (0.67 – 1.2 tons)	11.3
14,000 – 19,999 (1.3 – 1.7 tons)	11.2
≥ 20,000 (> 1.7 tons)	9.8

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

<sup>2</sup> CEE specifications are expected to change. Please note the program requirements until further notice.

# HVAC SPECIFICATIONS

## **Ground-source Heat Pumps**

New ground-source heat pumps that meet or exceed the qualifying 17 Energy Efficiency Ratio (EER) are eligible for an incentive. 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. Designers and installers of ground-source heat pump systems must be certified by the International Ground Source Heat Pump Association (IGSHPA).

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

Incentives are offered for occupancy-based controls that control electric air conditioning, heat pumps, and / or electric heating units for individual hotel rooms. Sensors must be controlled by automatic occupancy detectors or a key-card system, and the default setting for controlled units differ by at least 5 degrees (or shut the unit fan and heating or cooling off completely) from the operating set point during unoccupied periods. The control system may also be tied into other electric loads, such as lighting and plug loads to shut them off when occupancy is not sensed. The incentive is per HVAC unit controlled, not per sensor, for multi-room suites. Replacement or upgrades of existing occupancy-based controls are not eligible as a prescriptive incentive.

## **Hotel Guestroom Occupancy Sensor (Non-Electric Heat/AC)**

Incentives are offered for occupancy-based controls that control cooling-only HVAC units for individual hotel rooms. Sensors must be controlled by automatic occupancy detectors or a key-card system, and, the default setting for controlled units differ by at least 5 degrees (or shut the unit fan and heating or cooling off completely) from the operating set point during unoccupied periods. The incentive is per HVAC unit controlled, not per sensor; for multi-room suites. The control system may also be tied into other electric loads, such as lighting and plug loads to shut them off when occupancy is not sensed. Replacement or upgrades of existing occupancy-based controls are not eligible as a prescriptive incentive.

## **Energy Management System, Basic Central Time Control (Pre-Approval Application is Required)**

*Buildings upgrading existing digital EMS systems are not eligible for prescriptive incentives but MAY BE eligible under a Custom Application.*

Incentives at this level are offered for existing buildings that currently have either no control or only basic electronic or electromechanical time controls for HVAC or lighting or refrigeration systems. Buildings must have a conditioned area of at least 10,000 square feet. EMS system must be new and include central time control, graphic operator interface, whole building real-time power and energy monitoring capability, and at least three "enhanced" control strategies beyond those already in place at the site from the list provided on the EMS worksheet. This measure may not be combined with the central lighting control incentive. Customer or Trade Ally may complete the supplemental TRM EMS worksheet for this measure, which can be found at [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas).

## **Energy Management System, Electric Heat, No Present Central Time Control (Pre-approval required)**

*Buildings upgrading existing digital EMS systems are not eligible for prescriptive incentives but MAY BE eligible under a Custom Application.*

Incentives at this level are offered for existing buildings that have electricity as their primary source of heat and currently do not have time, or occupancy-based HVAC or lighting controls. Buildings must have a conditioned area of at least 10,000 square feet. EMS system must be new, and must include central time control, graphic operator interface, whole building real-time power and energy monitoring capability, and at least three "enhanced" control strategies beyond those already in place at the site from the list provided on the EMS worksheet. This measure may not be combined with the central lighting control incentive.

**Note:** All equipment, units or parts that are discarded as a result of this program must be disposed of properly by the Applicant.

# REFRIGERATION/FOOD SERVICE INCENTIVES WORKSHEET

## Refrigeration Measures

Measure	Incentive Unit	Quantity	Incentive/Unit	Incentive
Strip Curtains on Walk-in	Square Foot		\$4.00	
Anti-Sweat Heater Controls	Linear Foot		\$45.00	
EC Motor for Walk-in	Motor		\$50.00	
EC Motor for Reach-in Refrigerator cases	Motor		\$45.00	
Refrigerator Economizer	Compressor		\$100.00	
Evaporator Fan Controls	Motor		\$70.00	
Door Gaskets	Linear Foot		\$2.00	
Automatic Door Closers for Walk-in Coolers	Door		\$70.00	
Automatic Door Closers for Walk-in Freezers	Door		\$100.00	
Night Cover	Linear Foot		\$5.00	
LED Refrigeration Case Lighting	Door		\$50.00	
ENERGY STAR Solid Door Freezer	Unit		\$150.00	
ENERGY STAR Glass Door Freezer	Unit		\$400.00	
<b>Total Refrigeration Incentives:</b>				

## High - Efficiency Ice Makers

Capacity (lbs / 24 hrs)	Installed kWh per 100 lbs	Quantity	Incentive/Ice Maker	Incentive
101-200			\$100.00	
201-300			\$150.00	
301-400			\$175.00	
401-500			\$200.00	
501-1000			\$300.00	
1001-1500			\$400.00	
>1500			\$500.00	
<b>Total High Efficiency Ice Makers Incentives:</b>				

## Food Service & Other Measures

Measure	Incentive Unit	Quantity	Incentive/Unit	Incentive
Steam Cookers	Unit		\$450.00	
Combination Oven	Unit		\$2,000.00	
Hot Holding Cabinet	Unit		\$300.00	
Beverage Machine Controls	Unit		\$100.00	
Snack Machine Controls	Unit		\$30.00	
ENERGY STAR® Refrigerated Vending Machine	Unit		\$150.00	
Barrel Wraps - Injection Molding & Extruders	Ton		\$1.00	
<b>Total Food Service &amp; Other Incentives:</b>				

# REFRIGERATION/MISCELLANEOUS SPECIFICATIONS

## **Strip Curtains on Walk-in Coolers and Freezers**

Strip curtains can be installed to reduce infiltration in refrigeration storage areas. New strip curtains or clear plastic swinging doors must be installed on doorways of walk-in boxes and refrigerated warehouses. This incentive is not available for display cases or for replacing existing strip curtains that have useful life left. A pre-inspection may be performed. Incentive is based on square footage of doorway.

## **Anti-Sweat Heater Controls**

Incentives are offered for devices that sense the relative humidity in the air outside of the display case and cycles or turns off the glass door (if applicable) and frame anti-sweat heaters when the ambient dewpoint is below a preset setpoint. Technologies that can turn off anti-sweat heaters based on sensing condensation (on the inner glass pane) also qualify. Incentive is based on the horizontal linear footage of the case.

## **Electronically Commutated (EC) Evaporator Fan Motor (Refrigerated Cases or Walk-ins)**

Incentives are offered for replacement of an existing standard-efficiency shaded-pole evaporator fan motor in refrigerated display cases or fan coil in walk-ins. The replacement unit must be an Electronically Commutated Motor (ECM). This measure cannot be used in conjunction with the Evaporator Fan Controller measure.

## **Evaporator Fan Controls**

This measure is for the installation of controls in medium temperature walk-in coolers. The controller reduces airflow of the evaporator fans when there is no refrigerant flow. The measure must control a minimum of 1/20 HP where fans operate continuously at full speed. The measure also must reduce fan motor power by at least 75% during the off cycle.

This measure is not applicable if any of the following conditions apply:

- 1) Compressor runs all the time with high duty cycle
- 2) Evaporator fan does not run at full speed all the time
- 3) Evaporator fan motor runs on poly-phase power
- 4) Evaporator fan motor is not shaded-pole or permanent split capacitor (PSC)
- 5) Evaporator fan does not use off-cycle or time-off defrost

## **Door Gaskets**

Incentives are offered for the replacement of weak, worn out refrigeration door gaskets with new, better fitting gaskets. Tight-fitting gaskets inhibit the infiltration of warm and moist air from the surrounding environment. These gaskets must be installed on a glass or solid walk-in or reach-in cooler or freezer door which opens to an un-refrigerated space. The replacement gaskets must meet the case/door manufacturer's installation specifications in regards to dimensions, materials, attachment method, gasket profile, compression, and magnet placement. Incentive is per linear foot of installed gasket.

## **Automatic Door Closer for Walk-in Coolers**

This measure is for installing an automatic, hydraulic-type door closer on main walk-in cooler doors. These closers save energy by reducing the infiltration of warm outside air into the refrigeration itself. It must be installed on a door without a pre-existing closer.

## **Automatic Door Closer for Walk-in Freezers**

This measure is for installing an auto-closer to the main insulated opaque door(s) of a walk-in freezer. The auto-closer must firmly close the door when it is within one inch of full closure. It must be installed on a door without a pre-existing closer.

## **Night Covers**

Incentives are offered 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. When store operations are not 24 hours per day, night covers (a film type perforated cover) can be utilized on the cases to minimize the losses to the ambient space during periods when the store is closed. 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.

## **LED Refrigeration Case Lighting**

Incentives are offered 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. The two LED lamp products, 5' light bars and 6' light bars are eligible.

# REFRIGERATION/MISCELLANEOUS SPECIFICATIONS

## ENERGY STAR Solid and Glass Door Freezer

Incentives are offered for replacement of existing self-contained, open display freezers with freezers that are ENERGY STAR® listed. Only units with built-in refrigeration systems are qualified. Units with remote refrigeration systems or units do not qualify. Customers must provide proof that the appliance meets the CEE Tier II efficiency specifications using ASHRAE Standard 117-1992 (38°F ± 2°F). Incentive is per refrigerator.

**Table 6. Efficiency Standards for ENERGY STAR Qualified Commercial Glass Door Freezers (kWh per day)<sup>1</sup>**

Product Volume, cubic feet	Freezer
0 < V < 15	≤ 0.607V + 0.893
15 ≤ V < 30	≤ 0.733V – 1.000
30 ≤ V < 50	≤ 0.250V + 13.500
50 ≤ V	≤ 0.450V + 3.500

**Table 7: ENERGY STAR Qualified Commercial Solid Door Freezers (kWh per day)<sup>2</sup>**

Product Volume, cubic feet	Freezer
0 < V < 15	≤ 0.250V + 1.250
15 ≤ V < 30	≤ 0.400V – 1.000
30 ≤ V < 50	≤ 0.163V + 6.125
50 ≤ V	≤ 0.158V + 6.333

## High-Efficiency Ice Makers

The incentive offering covers ice machines that generate 60 grams (2 oz.) or lighter ice cubes, flaked, crushed, or fragmented ice. 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 that shows the ice maker performance rating in accordance with ARI Standard 810.

## Steam Cookers

Incentives are offered for replacement electric steamers that are ENERGY STAR® listed with a Cooking Energy Efficiency of 50% for all size units. Used or rebuilt equipment is not eligible. Incentive is per cooker. Documentation of efficiency must be provided.

## Combination Oven

Incentives are offered for replacement electric units that have a Cooking Energy Efficiency of at least 60%. Used or rebuilt equipment is not eligible. Incentive is per oven. Documentation of efficiency must be provided.

## Hot Holding Cabinet

Incentives are offered for replacement units that are ENERGY STAR® listed and consume <40 W per cubic foot. Cook-and-hold equipment is not eligible. Used or rebuilt equipment is not eligible. Incentive is per cabinet.

## Beverage and Snack Machine Controls

Incentives are offered for refrigerated vending machines that contains non-perishable bottled and canned beverages. Controller for both types of systems must include a passive infrared occupancy sensor to turn off fluorescent lights and other energized machine systems when the surrounding area is unoccupied for 15 minutes or longer. For the refrigerated machines, the control logic may include periodic power up at 2-hour intervals or longer to maintain product temperature and provide compressor protection.

## ENERGY STAR® Refrigerated Beverage Vending Machines

Incentives are offered for ENERGY STAR® beverage vending machines. Qualifying machines can be found at [http://www.energystar.gov/ia/products/prod\\_lists/vending\\_machines\\_prod\\_list.pdf](http://www.energystar.gov/ia/products/prod_lists/vending_machines_prod_list.pdf).

## Barrel Wraps for Injection Molders and Extruders

Incentives are offered for insulated blankets strapped around barrels of extruders or injection molders. Blankets must be installed on previously un-insulated barrels, in accordance with manufacturer recommendations.

<sup>1</sup> [www.energystar.gov](http://www.energystar.gov), Note: V = Internal volume in ft<sup>3</sup>

<sup>2</sup> [www.energystar.gov](http://www.energystar.gov), Note: V = Internal volume in ft<sup>3</sup>



# MOTOR SPECIFICATIONS

**Customer or Trade Ally must complete the TRM motor and VFD worksheet for all motor and VFD measures. The worksheet must be submitted in an Excel-readable electronic format. An Excel version of the worksheet is available at [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas).**

## **NEMA Premium Efficiency Motors**

Incentives are offered for three-phase AC induction motors, from 1 to 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 shows motor type, motor horsepower, model number, and efficiency rating. Customers should consider matching water or air flows (GPM, CFM) of the existing pump or fan when installing energy-efficient motors that inherently have higher speeds (less slip), which may increase energy savings. Incentive is per motor.

## **Variable Speed Drives on HVAC Fan and Pump Motors**

Incentives are offered for variable-speed drives (VSDs) that are installed on existing HVAC fans and pumps. New chillers with integrated VSDs are eligible under the chiller incentive. VSDs on new equipment that is required by code are not eligible. The installation of a VSD must accompany the permanent removal or disabling of any throttling devices such as inlet vanes, bypass dampers, and throttling valves. VSDs for non-HVAC applications may be eligible for a custom incentive. The incentive is offered per controlled HP.

## **Speed Control for Kitchen Exhaust Hoods**

The measure consists of installing a control system that varies the exhaust rate of kitchen ventilation (exhaust and/or makeup air fans) based on the energy and effluent output from the cooking appliances (i.e., the more heat and smoke/vapors generated, the more ventilation needed). This involves installing a temperature sensor in the hood exhaust collar and/or an optic sensor on the end of the hood that senses cooking conditions and allows the system to automatically vary the rate of exhaust to match requirements by adjusting the fan speed accordingly.

## **Variable Frequency Drives for Process Equipment**

VFD must be used in conjunction with a process (non HVAC) application. Redundant or back-up units do not qualify. VFDs replacement of existing VFDs does not qualify. The VFD must control motor speed automatically in response to differential pressure, flow, temperature, or other variable signal. VFDs installed as "soft start" without automatic, closed loop speed control do not qualify. 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 driven equipment 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.

## **Variable Frequency Drives for Air Compressors**

Incentives are offered for new variable speed drive air compressors or VFDs that control the speed of an existing compressor less than or equal to 50 hp. Redundant or back-up units do not qualify. VSDs on new equipment are not eligible. The incentive is per controlled HP.

# CUSTOM INCENTIVES WORKSHEET

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

Prior to submitting application, please contact the SmartIdeas program staff.

Incentives		On Peak time is defined as the time between 12:00 PM (Noon) and 8:00 PM during non-holiday weekdays between June 1 and September 30.
On-peak kWh	\$0.12/kWh	
Off-peak kWh	\$0.08/kWh	

Item 1				
System Description		On-peak kWh Savings	On-peak \$/kWh	Subtotal
<b>Measure Category:</b>				
Before Retrofit	After Retrofit	Off-peak kWh Savings	\$0.12	
		Measure Cost*	Off-peak \$/kWh	
		Annual Oper. Hrs	\$0.08	

Item 2				
System Description		On-peak kWh Savings	On-peak \$/kWh	Subtotal
<b>Measure Category:</b>				
Before Retrofit	After Retrofit	Off-peak kWh Savings	\$0.12	
		Measure Cost*	Off-peak \$/kWh	
		Annual Oper. Hrs	\$0.08	

Item 3				
System Description		On-peak kWh Savings	On-peak \$/kWh	Subtotal
<b>Measure Category:</b>				
Before Retrofit	After Retrofit	Off-peak kWh Savings	\$0.12	
		Measure Cost*	Off-peak \$/kWh	
		Annual Oper. Hrs	\$0.08	

Item 4				
System Description		On-peak kWh Savings	On-peak \$/kWh	Subtotal
<b>Measure Category:</b>				
Before Retrofit	After Retrofit	Off-peak kWh Savings	\$0.12	
		Measure Cost*	Off-peak \$/kWh	
		Annual Oper. Hrs	\$0.08	

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

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

Note:

\* Measure Cost is the cost to implement rebated efficiency measures less all costs incurred to achieve other project benefits. The Measure Cost may be the increment required to deliver an efficiency improvement over the base case efficiency (minimum allowable by code or industry standard) or the full cost of a measure).

\*\* Total Custom Incentives may not exceed 100% of the total custom project cost.

# CUSTOM PROJECTS SPECIFICATIONS

## Instructions for Energy Savings Calculations for Custom Projects

Custom projects must involve measures that result in a reduction in electric energy use (kWh) or a permanent load reduction (kW). Electricity savings may result from either efficiency improvements or fuel switching.

Custom Incentives are based on the first year on-peak and off-peak kilowatt-hour savings. The on- and off-peak period is defined by the Technical Reference Manual (TRM) for Pennsylvania Act 129 as the period from noon to 8:00 PM, non-holiday weekdays from June 1 through September 30. Custom applications must be accompanied by detailed engineering calculations that document the annual total and on-peak energy savings.

The following serve as guidelines for the minimum required documentation.

## Equipment Information Submittals

- A list of the present and proposed equipment and components to be installed, including manufacturer's catalog/model number
- Manufacturer's specification sheets showing capacities and performance for all major components

## Energy Savings Calculations

Provide calculations documenting the predicted energy consumption of the existing (or baseline) and proposed system using appropriate analytical tools and clearly stated assumptions. Calculations may be performed by "hand," but spreadsheet analysis or more rigorous modeling is preferred. All analysis should be provided in electronic format. All assumptions such as operating hours, existing and proposed equipment operational details must be presented. Engineering algorithms and procedures from recognized technical organizations such as ASHRAE, SMACNA, ANSI, etc. must be used. Use rated performance factors tested under accepted procedures specified by recognized rating agencies such as AHRI, ANSI, ASTM, etc. Provide an explanation when equipment performance rating conditions vary from standard conditions.

In support of the calculations, extensive documentation must be provided that provides the basis for the savings estimates. The documentation must provide information on the equipment operating schedule, daily and seasonal load profile, and baseline AND energy efficient equipment performance at the operating loads. Typical documentation for custom projects often includes:

- Engineering or architectural drawings and "equipment schedule" sheets
- Component specification sheets that include part load efficiency or performance factors
- Spreadsheet calculations or input/output files and results from system modeling or other engineering analysis using accepted engineering algorithms and practices
- Log sheets, trend logs from a building management system, or other operating documentation that are often necessary to document operating hours and equipment loading, and used as a basis for the calculations (in some cases, short term monitoring may be required to document the load profile)
- Control sequence of operations that are necessary where controls play a part in the savings equation

Additional documentation, other than that described in the application, may be required for program participation. Larger projects may also require pre- and post-project sub metering, or monitoring of loads and/or power input as part of another measurement and verification activity to demonstrate the actual energy savings that are realized.

## Baseline for Custom Analysis

Where equipment is replaced prior to the end of its rated service life in order to achieve energy savings, the existing equipment performance may be used as the baseline in the energy savings calculations. Where equipment is replaced due to failure or for other reasons (such as obsolescence or a need for more capacity), the baseline performance used in the savings calculation should be either the minimum performance that would be required by code for that equipment type and application (where a code applies) or the performance of the equipment that would have been selected as the customer's "standard practice" when a code does not apply.

## Custom Worksheets

PECO has created custom worksheets for Lighting, Compressed Air, HVAC, Energy Management Systems and Motor/Variable Speed Drive projects. The corresponding worksheets must be completed and submitted with the application where they apply. Visit [www.peco.com/SmartIdeas](http://www.peco.com/SmartIdeas) to download the worksheets.

## Baseline or Existing System Summary

Include make, model number, name plate information (such as operating voltage and rated full load amps), rated capacity, quantities, equipment condition and age, facility operating hours, equipment operating schedule, and load curves. If needed, attach separate sheets.

All decisions regarding incentives for custom projects are in the sole discretion of PECO.

# TECHNICAL ASSISTANCE WORKSHEET

## ENERGY AUDITS

Energy Audit Contractor Name	Phone #	Email		
Energy Audit Contractor Address	City	State	Zip	

Describe the Scope of Work and Systems Investigated				
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Contract Date	Completion Date	Energy Audit Area (sq ft)	
Address of Facility ('Installation Address' from Page 6)	Total Energy Audit Cost		
	Incentive: 50% of Energy Audit Cost (calculated field)		Not to exceed \$0.10 per square foot, up to an incentive payment of \$10,000

Please submit a copy of the final report and any supporting details in PDF format.

### Executive Summary/Audit Results - Measure Details (Submit upon Project Completion)

#	Measure Implemented?	Measure Description	End Use Description	Total Annual kWh Savings	Summer On-Peak kWh Savings	Gas Savings (or Gain) in Therms	Annual Electric Savings (\$)	Total ECM Implementation Cost (\$)	Potential PECO ECM Incentive (\$)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
<b>Totals</b>									

Customer and energy audit contractor signatures are required after 50% of the equipment is installed.

PECO Customer Signature	Print Name	Date
Energy Audit Contractor Signature	Print Name	Date

The energy audit outlined in this worksheet has been reviewed and verified by a Certified Energy Manager (CEM) or licensed Professional Engineer (PE).

CEM or PE Signature	Print Name	CEM?	PE?	Date

# TECHNICAL ASSISTANCE SPECIFICATIONS

## Energy Audit – Available to Government, Institutional, and Non-Profit Customers

An energy audit is a comprehensive assessment of all major energy end uses at a facility toward identifying cost effective energy saving measures.

### Objectives

- Provide government, institutional, and non-profit customers' assistance in identifying and carrying out comprehensive energy efficiency opportunity assessments
- Provide these customers access to qualified energy audit firms to evaluate their facilities for comprehensive energy efficiency opportunities that result in completed energy efficiency projects.
- Provide partial financial support for studies where projects are implemented.

### Eligibility

- All facilities that are owned or occupied by government, institutional, and non-profit customers that are customers of PECO Energy.
- Incentives will be available to these customers for studies completed after 3/15/10. However studies that meet the guidelines (see below) that were completed between 7/1/09 and 3/15/10 will also be eligible for the energy audit incentive.

### Guidelines

- Studies provided by qualified firms that can perform energy audits that meet the program guidelines. PECO recommends that customers with multiple facilities use the ENERGY STAR® Portfolio Manager ([www.energystar.gov](http://www.energystar.gov)) Benchmarking tool. Benchmarking will allow customers with multiple facilities, such as a school system, to prioritize facilities for further energy audits.
- A comprehensive energy audit requires that energy conservation measures (ECMs) from at least two major end use areas such as lighting and HVAC must be evaluated. Note: studies involving single ECMs will not be eligible for energy audit incentives, e.g. lighting contractors providing an energy audit as part of a lighting proposal.
- The energy audit incentive will be based on a not to exceed cost of \$.10/SF and will cover ½ the cost of the energy audit up to a cap of \$10,000. The completed energy audit must be signed and submitted by the customer and by the Certified Energy Manager (CEM) or Professional Engineer that led the energy audit for the study firm. The customer has one year from the completion of the study to complete the installation of ECMs accounting for at least 50% of the savings identified in the study. The customer will then receive the incentive payment. If the project is delayed the customer must notify PECO to request an extension.
- The customer has one year from the completion of the study to complete the installation of ECMs accounting for at least 50% of the cost effective kWh savings identified in the study.

### Completed Energy Audit Format

- Cover Letter - Include the customer's name, the name & location of the facility being studied, date submitted and identity & contact information of the energy audit firm and the CEM.
- Introduction Section - Describe the energy audit report and its purpose, describe the facility in as much detail as possible, including: facility square footage, age, general construction (brick, steel frame, etc), general dimensions (bldg height, # of floors, garage, etc), hours of occupancy and/or number of shifts, characterization of building usage, description of the base systems (lighting, HVAC, refrigeration, process, etc).
- Executive Summary Section - Briefly describe the energy audit scope, provide a summary table of the recommended ECMs with the following columns: measure description, measure life, annual energy savings, peak demand savings, annual cost savings, estimated installed cost by labor, material and total cost, potential incentive, and simple payback after incentive. Briefly describe each ECM. Provide one or two sentences to describe the base case and another to describe the proposed case. Touch on the major issues. Include a cost estimate to implement the ECM, based on standard estimating practices, and a proposed timeline. Indicate the likelihood that the customer will go forward with project. Complete the Excel spreadsheet summarizing the estimated savings and costs of the identified projects
- Energy Conservation Measure and/or Technology Application Section - Provide a detailed narrative description of each recommended ECM. Clearly document key assumptions made in analyzing each measure and describe the method of analysis. Provide a summary of the energy savings analysis and the results. Document any interactive effects, benefits or disadvantages. Where appropriate, describe the monitoring procedures conducted to determine energy usage and potential energy savings. If a building simulation modeling program was used, provide a narrative on the input data used to screen each measure. This is especially important when assumptions deviate from the model's default settings. Provide estimated cost information based on standard estimating practices. Include a summary table with installation costs, annual energy savings, peak demand savings, rated life of measure, potential incentives, and simple payback after the incentive.
- Include completed program application forms for eligible incentives with the energy audit.