



Legal Department

American Electric Power  
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Columbus, OH 43215-2373  
AEP.com

March 12, 2012

Chairman Todd Snitchler  
Ohio Power Siting Board  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, OH 43215-3793

**RE:**

**In the Matter of Mount Vernon City Schools )  
and Ohio Power Company )  
for Approval of A Special )  
Arrangement Agreement )  
with a Mercantile Customer )**

**Case No. 12-0858-EL-EEC**

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Dear Chairman Snitchler,

Attached please find the Joint Application of Ohio Power Company (OPCo) and mercantile customer Mount Vernon City Schools for approval of a Special Arrangement of the commitment of energy efficiency/peak demand reduction (EE/PDR) resources toward compliance with the statutory benchmarks for 2012.

Amended Substitute Senate Bill 221 sets forth in R.C. 4928.66 EE/PDR benchmarks that electric distribution utilities shall be required to meet or exceed. The statute allows utilities to include EE/PDR resources committed by mercantile customers for integration into the utilities programs to be counted toward compliance with a utility's EE/PDR benchmarks. The statute also enables the Commission to approve special arrangements for mercantile customers that commit EE/PRD resources to be counted toward compliance with EE/PDR benchmarks.

The Commission's Order in Case No. 10-834-EL-EEC, established a streamlined process to expedite review of these special arrangements by developing a sample application process for parties to follow for consideration of such programs implemented during the prior three calendar years. Attached is OPCo's version of that application and accompanying affidavit. Any confidential information referenced in the Joint Application has been filed in Commission Docket 10-1599-EL-EEC, under a request for protective treatment. OPCo respectfully requests that the Commission treat the two cases as associated dockets.

Cordially,

/s/ Yazen Alami  
Yazen Alami, Esq.

Attachments



**Case No.:** 12-0858-EL-EEC

Mercantile Customer: MOUNT VERNON CITY SCHOOLS

Electric Utility: Ohio Power

Program Title or Description: AEP Ohio Business Incentives for Energy Efficiency: Self Direct Program

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. [10-834-EL-POR](#)

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at [ee-pdr@puc.state.oh.us](mailto:ee-pdr@puc.state.oh.us).

## Section 1: Company Information

Name: MOUNT VERNON CITY SCHOOLS

Principal address: 302 Martinsburg Rd, Mt Vernon, Oh 43050

Address of facility for which this energy efficiency program applies: 305 E Pleasant St, Mount Vernon, Oh 43050-1822

Name and telephone number for responses to questions:

Stephen Short, Mount Vernon City Schools, (740) 397-7422

Electricity use by the customer (check the box(es) that apply):

- ☐ The customer uses more than seven hundred thousand kilowatt hours per year at our facility. (Please attach documentation.)

See Confidential and Proprietary Attachment 4 - Calculation of Rider Exemption and UCT which provides the facility consumption for the last three years, benchmark kWh, and the last 12 months usage.

- ☒ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.) When checked, see Attachment 6 - Supporting Documentation for a listing of the customer's name and service addresses of other accounts in the AEP Ohio service territory.

## Section 2: Application Information

A) The customer is filing this application (choose which applies):

- ☐ Individually, on our own.
- ☒ Jointly with our electric utility.

B) Our electric utility is: Ohio Power Company

The application to participate in the electric utility energy efficiency program is "Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application."

C) The customer is offering to commit (choose which applies):

- ☐ Energy savings from our energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
- ☐ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
- ☒ Both the energy savings and the demand reduction from the customer's energy efficiency program. (Complete all sections of the Application.)

### Section 3: Energy Efficiency Programs

A) The customer's energy efficiency program involves (choose whichever applies):

- ☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, 7/11/2008 and the date on which the customer would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).

The remaining life of the equipment varies and is not known with certainty. The future replacement date is unknown and has historically been at the end of equipment life. Replacement was completed early to achieve energy savings and to reduce future maintenance costs.

- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):
- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):
- ☐ Behavioral or operational improvement.

B) Energy savings achieved/to be achieved by your energy efficiency program:

- 1) If you checked the box indicating that your project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) - (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Unit Quantity (watts) = Existing (watts x units) - Installed (watts x units)

kWh Reduction (Annual Savings) = Unit Quantity x (Deemed kWh/Unit)

Annual savings: 20,656 kWh

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for annual energy savings calculations and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

- 2) If you checked the box indicating that you installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: kWh

Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.

- 3) If you checked the box indicating that your project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: kWh

Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.

- 4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined.

## Section 4: Demand Reduction/Demand Response Programs

A) The customer's program involves (check the one that applies):

- ☒ Coincident peak-demand savings from the customer's energy efficiency program.
- ☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
- ☐ Potential peak-demand reduction check the one that applies):

➤ Choose one or more of the following that applies:

- ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.
- ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?

The coincident peak-demand savings are permanent installations that reduce demand through energy efficiency and were installed on the date specified in Section 3 A above.

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

$$\text{Unit Quantity (watts)} = \text{Existing (watts x units)} - \text{Installed (watts x units)}$$

$$\text{KW Demand Reduction} = \frac{\text{Unit Quantity (watts)}}{\text{(watts)}} \times \text{(Deemed KW/Unit)}$$

6.7 kW

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for peak demand reduction calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

## **Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)**

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

☒ Option 1: A cash rebate reasonable arrangement.

OR

☐ Option 2: An exemption from the cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

B) The value of the option that the customer is are seeking is:

Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):

☐ A cash rebate of \$\_\_\_\_\_. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

OR

☒ A cash rebate valued at no more than 50% of the total project cost, which is equal to \$ 1,965.60. (Attach documentation and calculations showing how this payment amount was determined.)

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for incentive calculations for this mercantile program.

Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.



- ☐ An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for \_\_\_\_ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

OR

- ☐ A commitment payment valued at no more than \$\_\_\_\_\_. (Attach documentation and calculations showing how this payment amount was determined.)

OR

- ☐ Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of an ongoing efficiency program that is practiced by our organization. (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

## Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: \_\_\_\_\_  
(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: 2.8 (Skip to Subsection 2.)

### Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were \_\_\_\_\_.

Our program costs were \_\_\_\_\_.

The utility's incremental measure costs were \_\_\_\_\_.

### Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were \$ 5,860.58

The utility's program costs were \$ 123.93

The utility's incentive costs/rebate costs were \$ 1,965.60.

## Section 7: Additional Information

Please attach the following supporting documentation to this application:

- Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment.

See Attachment 1 - Self Direct Project Overview and Commitment for a description of the project. See Attachment 6 - Supporting Documentation, for the specifications of the replacement equipment 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed. Due to the length of time since the equipment replacement, the make, model and year of the replaced equipment is not available.

- A copy of the formal declaration or agreement that commits your program to the electric utility, including:

- 1) any confidentiality requirements associated with the agreement;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All confidentiality requirements are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.)

- 2) a description of any consequences of noncompliance with the terms of the commitment;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All consequences of noncompliance are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;

None required because the resources committed are permanent installations that reduce demand through increased efficiency during the Company's peak summer demand period generally defined as May through September and do not require specific coordination and communication to provide demand reduction capabilities to the Company.

- 4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,

See Attachment 2 - Self Direct Program Blank Application including Rules and Requirements granting such permission pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 5) a commitment by you to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

See Attachment 1 - Self Direct Project Overview and Commitment for the commitment to comply with any information and compliance reporting requirements imposed by rule or as part of the approval of this arrangement by the Public Utilities Commission of Ohio.

- A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

The Company applies the same methodologies, protocols, and practices to Self Direct Program retrospective projects that are screened and submitted for approval as it does to prospective projects submitted through its Prescriptive and Custom Programs. The Commission has not published a technical reference manual for use by the Company so deviations can not be identified. The project submitted is a prescriptive project and energy savings are determined as described in Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.



# Public Utilities Commission

Application to Commit  
Energy Efficiency/Peak Demand  
Reduction Programs  
(Mercantile Customers Only)

Case No.: 12-0858-EL-EEC

State of Ohio :

JOO CHING YONG, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:  
  
KEMA Services, Inc agent of Ohio Power
2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.

Yoo Ching CEM, LEED AP BD+C  
Signature of Affiant & Title

Sworn and subscribed before me this 6<sup>th</sup> day of March, 2012 Month/Year

[Signature]  
Signature of official administering oath

Kimberly Flowers,  
Print Name and Title  
Outreach  
Coordinator

My commission expires on June 01, 2016







A unit of American Electric Power

Self Direct Project Overview & Commitment  
Attachment 1  
Page 1 of 1**Self Direct Project Overview & Commitment**

The Public Utility Commission of Ohio (PUCO) will soon review your application for participation in AEP Ohio's Energy Efficiency/Peak Demand Response program. Based on your submitted project, please select by initialing one of the two options below, sign and fax to 877-607-0740.

Customer Name	MOUNT VERNON CITY SCHOOLS		
Project Number	AEP-11-05352		
Customer Premise Address	305 E PLEASANT ST. MOUNT VERNON, OH 43050 822		
Customer Mailing Address	302 Martinsburg Rd, Mt Vernon, OH 43050		
Date Received	12/16/2011		
Project Installation Date	7/11/2008		
Annual kWh Reduction	20,656		
Total Project Cost	\$5,616.00		
Unadjusted Energy Efficiency Credit (EEC) Calculation	\$2,620.80		
Simple Payback (yrs)	6.8		
Utility Cost Test (UCT)	2.8		
Please Choose One Option Below and Initial			
Option 1 - Self Direct EEC: 75%	\$1,965.60	<input checked="checked" type="checkbox"/>	Initial: <i>[Signature]</i>
Option 2 - EE/PDR Rider Exemption	#N/A	<input type="checkbox"/>	Initial: _____

**Note:** This is a one time selection. By selecting Option 1, the customer will receive payment in the amount stated above. Selection of Option 2: EE/PDR rider exemption, will result in the customer not being eligible to participate in any other energy efficiency programs offered by AEP Ohio during the period of exemption. In addition, the term of Option 2: EE/PDR rider exemption is subject to ongoing review for compliance and could be changed by the PUCO.

If Option 1 has been selected, will the Energy Efficiency Funds selected help you move forward with other energy efficiency projects? \_\_\_\_\_ YES \_\_\_\_\_ NO

**Project Overview:**

The Self Direct (Prescriptive) project that the above has completed and applied is as follows.  
(32) 400-watt metal halides fixtures were replaced with 6L 4' 32W T8 hi-bay fixtures.

The documentation that was included with the application proved that the energy measures applied for were purchased and installed.

By signing this document, the Mercantile customer affirms its intention to commit and integrate the above listed energy efficiency resources into the utility's peak demand reduction, demand response, and energy efficiency programs. By signing, the Mercantile customer also agrees to serve as a joint applicant in any filings necessary to secure approval of this arrangement by the Public Utilities Commission of Ohio, and comply with any information and compliance reporting requirements imposed by rule or as part of that approval.

Ohio Power Company

By: *[Signature]*

Title: Manager

Date: February 29, 2012

MOUNT VERNON CITY SCHOOLS

By: *[Signature]*

Title: Superintendent

Date: 2-28-12





## Self-Direct Program Project Application

**Jan 2011 - Dec 2011**

### Step 1: Check Project and Equipment Eligibility

- ✓ Project must be a facility improvement that results in a *permanent* reduction in electrical energy usage (kWh).
- ✓ *All installed equipment must meet or exceed the specifications given in the application* and be installed in facilities served by AEP Ohio: Customer must have a valid AEP Ohio account number on an eligible AEP Ohio non-residential rate (see terms and conditions for list of eligible rates eligibility requirements).

### Step 2: Submit Application

- ✓ Fill out the Customer Information form and the Worksheet for the measures that you are installing. You may submit the application via mail, fax or e-mail.

**Submit your application to:**  
**AEP Ohio Business Incentives for Energy Efficiency**  
**2740 Airport Drive Suite 160**  
**Columbus, OH 43219**  
**Call: (877)-607-0739**  
**Fax: (877)-607-0740**  
**Email: [gridsmartohio@kema.com](mailto:gridsmartohio@kema.com)**  
**Visit our web site at [gridsmartohio.com](http://gridsmartohio.com)**

- ✓ Submit a completed application prior to Oct 1st for any projects prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. Complete the checklist page and attach the documentation listed: customer information page, a signed Agreement and Signature page, measure worksheet, scope of work (type, quantity and wattage of old and new equipment), dated and itemized invoices for the purchase and installation of all equipment installed and specification sheets for all equipment installed showing that it meets the program specifications.

### Step 3: Project Review

- ✓ The program team will review your Application. For some projects, an inspection will be part of the review, and you will be contacted to schedule it.
- ✓ After approval by AEP Ohio, the customer will be sent an Overview and Commitment form to sign for all self-direct projects. After the Overview and Commitment form is returned the project will be submitted to the Public Utilities Commission of Ohio (PUCO) for consideration. The PUCO will assign a case number and review the project details that were prepared by AEP Ohio. The PUCO may request additional information, approve or reject the energy efficiency credits.

### Step 4: Receive Energy Efficiency Credits

- ✓ The program team will issue the energy efficiency credits, within four to six weeks after PUCO project approval.
- ✓ In lieu of a one-time energy efficiency credit, you may elect to seek an exemption from the Energy Efficiency / Peak Demand Reduction (EE/ PDR) Rider for the associated electric account(s) for a defined period of time as stated on this Application. For this exemption the Energy Efficiency Credit amount (Option 1) is compared to the estimated value of the estimated EE/PDR Rider obligation (Option 2), as calculated by AEP Ohio. The value of Option 2 will be approximately equal to the value of Option 1. If exemption is elected, the affected account is not eligible for other programs offered by AEP Ohio during the exemption period. Unless additional resources are committed, you will, after the specified number of months exempted, be again subject to the EE/ PDR Rider. New Construction projects are not eligible to elect Option 2. Major Renovation projects that do not have a representative billing history for three years prior to the project installation are also not eligible to elect Option 2.
- ✓ If the energy efficiency credit is elected, you remain in the EE/ PDR rider for the period of time that an exemption would have been in effect and may also participate in the AEP Ohio programs. However, during that period of time, you will not be allowed to elect the Option 2 exemption for any additional self-direct projects for the same account number.
- ✓ You are allowed and encouraged to consider using all or a portion of the energy credits, as received from AEP Ohio under this program, to help fund other energy efficiency and demand reduction projects you choose to initiate in the future. Future projects can also qualify for credits under the Prescriptive or Custom programs.



## Self-Direct Program Project Application

### APPLICATION CHECKLIST

APPLICATION	
<b>Required Attachments</b>	
<input type="checkbox"/>	<a href="#">Customer/Contractor Information</a>
<input type="checkbox"/>	<a href="#">Completed Energy Efficiency Credits Requested Section of Agreement and Signature Page</a>
<input type="checkbox"/>	Itemized Invoices
<input type="checkbox"/>	Equipment Specifications
<input type="checkbox"/>	Scope of Work
<b>Worksheets</b>	
<input type="checkbox"/>	<a href="#">Lighting</a>
<input type="checkbox"/>	<a href="#">HVAC</a>
<input type="checkbox"/>	<a href="#">Refrigeration</a>
<input type="checkbox"/>	<a href="#">Motors and VFD</a>
<input type="checkbox"/>	<a href="#">Custom</a>
Application Date:	_____
Completion Date:	_____
Project Incremental Cost	_____
<i>*Incomplete applications will delay processing and energy efficiency credits. Please complete and submit forms for above checked boxes.</i>	

*Please fill out if this is a revised submittal*

ORIGINAL SUBMITTAL DATE:	_____
APPLICATION NUMBER (IF KNOWN):	_____

**AEP Ohio Business Incentives Program for Energy Efficiency**  
**2740 Airport Drive Suite 160**  
**Columbus, OH 43219**

Phone: (877)-607-0739

Fax: (877)-607-0740

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

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





## Self-Direct Program Project Application

# TERMS AND CONDITIONS

Columbus Southern Power and Ohio Power Company are collectively known as AEP Ohio (AEP Ohio). AEP Ohio is offering Prescriptive and Custom energy efficiency credits under the AEP Ohio Business Incentives Program for Energy Efficiency to credit the implementation of past cost-effective energy-efficiency improvements for non-residential (commercial and industrial) customers. AEP Ohio provides energy efficiency credits (EEC) for the purchase and installation of qualifying cost effective equipment in the customer's facility under the Terms and Conditions provided in this application and subject to regulatory approvals. Energy efficiency credits will only be provided in the form of a check or an Energy Efficiency/Peak Demand Reduction (EE/PDR) Rider exemption under this program.

All applications are subject to review and approval by AEP Ohio, its contractor(s)/agent(s), and the Public Utility Commission of Ohio (PUCO) prior to any EEC payments or exemptions from the EE/PDR rider in this program. Funds are limited and subject to availability.

### Program Effective Dates

The AEP Ohio Business Incentives for Energy Efficiency program EEC are offered until approved funds are exhausted or Dec 31 of each program year, whichever comes first. The effective dates of Year 3 of the program and application submittal requirements are as follows:

- Self-direct projects are projects completed since 1/1/2008. Self-direct projects are eligible to apply for EEC with this application. Future projects that are not yet completed should apply on the Prescriptive/Custom application.
- All 2011 AEP Ohio Business Incentives for Energy Efficiency program Applications should be received no later than Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. AEP Ohio reserves the right to extend or shorten this timeline.
- Subsequent program year plans will be made available toward the end of the existing program year. At the current time, AEP Ohio has a commitment to provide this program through the 2011 program year.

### Program and Project Eligibility

The Self-Direct Program applies to customer facilities served by AEP Ohio's retail electric rates who meet the minimum energy usage requirements of 700,000 kWh per year or who are part of a national account involving multiple facilities in one or more states.

The AEP Ohio Business Incentives for Energy Efficiency program offers both Prescriptive energy efficiency credits for some of the more common energy efficiency measures and Custom energy efficiency credits for those eligible improvements not included on the list of Prescriptive measures. Program credits are available under the AEP Ohio Business Incentives for Energy Efficiency program to non-residential customers served at AEP Ohio's regulated retail rates, where qualifying projects are installed in a facility in AEP Ohio's electric service territory. These credits are available to all non residential customers who pay into the (EE/PDR) rider and receive their electricity over AEP Ohio wires, regardless of which retail electric supplier the customer has chosen to purchase power from.

Custom projects must involve measures that result in a reduction in electric energy usage due to an improvement in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a Custom credit. However, projects that involve an automated control technology such as energy management system programming may be eligible for a credit. All projects must meet AEP Ohio's cost-effectiveness requirements. The project simple payback prior to the credit must pass the utility cost effectiveness test(s) determined by AEP Ohio, to qualify for credit. Normally, most projects with a simple payback prior to the credit greater than one year and less than seven years generally pass the utility cost effectiveness test(s). The peak demand hours are defined as weekdays, non-holidays 3:00 PM to 6:00 PM, June through August.

Projects involving measures covered by the Prescriptive energy efficiency credit portion of the program are not eligible for a Custom energy efficiency credit. However, the applicant has the option to apply for a Custom energy efficiency credit for whole building integrated projects or systems even if they include Prescriptive measures.

The energy efficiency credits are calculated in the following Prescriptive or Custom worksheets.



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

Project requirements under the AEP Ohio Business Incentives Program for Energy Efficiency include the following:

- Projects must involve a facility improvement that results in a permanent reduction in electrical energy usage (kWh)
- Projects that are NOT eligible for a credit include the following:
  - Fuel switching (e.g. electric to gas or gas to electric)
  - Changes in operational and/or maintenance practices or simple control modifications not involving capital costs
  - Removal or termination of existing processes, facilities, and/or operations
  - On-site electricity generation
  - Projects involving gas-driven equipment in place of or to replace electric equipment (such as a chiller)
  - Projects focused primarily on power factor improvement;
  - Projects that involve peak-shifting (and not kWh savings)
  - Renewables
  - Are required by state or federal law, building or other codes, or are standard industry practice
  - Are easily reverted/removed or are installed entirely for reasons other than improving energy efficiency
  - Include other conditions to be determined by AEP Ohio.
- Any measures installed at a facility must produce **verifiable** and **persistent** energy reduction. Measures must be sustainable and provide 100% of the energy benefits as stated in the Application for a period of at least five (5) years or for the life of the product, whichever is less. If the Customer ceases to be a delivery service customer of AEP Ohio or removes the equipment or systems at any time during the 5-year period or the life of the product, the Customer may be required to return a prorated amount of credit funds to AEP Ohio.
- Customer can not apply for incentives for future projects and elect after the fact to apply for credits under this program.
- Confidential information contained in any documents associated with this application will be protected from public filings. However, this information may be disclosed to the Public Utilities Commission of Ohio for further review and approval.
- All equipment must be new. Used or rebuilt equipment is only eligible for energy efficiency credits if the energy efficiency rating of the used equipment is the same energy efficiency level of new equipment.
- All installed equipment must meet state, federal, or local codes and requirements when applicable.
- Costs associated with internal labor are not eligible.
- Projects must be installed on the AEP Ohio electric account listed on the application
- Equipment must be purchased, installed, and operating (or capable of operating in the case of seasonal uses) prior to submitting an application for energy efficiency credits
- The energy efficiency credits are paid as a one-time, one-program offer and cannot be combined with incentive payments from other AEP Ohio programs. The customer may be eligible to participate in other programs offered by AEP Ohio, as long as no project receives more than one incentive/credit.

PROGRAM ENERGY EFFICIENCY CREDITS	
Energy efficiency credit levels for one-year energy savings	See tables for prescriptive credits Custom credits \$0.08/kWh x 75%
Minimum / Maximum simple payback before energy efficiency credit applied	Must pass cost effectiveness test(s) (determined by AEP Ohio) Generally 1 year Min / 7 year Max
Maximum payout	75% of 50% of the Incremental project cost (additional caps may also apply)
Energy efficiency credit levels for projects completed since 1/1/2008	Calculated amount on the Prescriptive or Custom worksheets attached and subject to funding limits
Credit Limit	Calculated credits greater than \$160,000 per project are subject to a sliding scale credit tiering calculation.
Credit Calculation Order	Measure credit caps are applied first Project cost credit limits are applied second Credit tiering is applied third 75% factor applied to credit last



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

### Energy Efficiency Credit Limits

For both the Prescriptive and Custom measures in this application, the total energy efficiency credits shall be 75% of the lesser of: 1) The calculated credit as approved by AEP Ohio, or 2) 50% of the incremental project cost with larger projects subject to the following limits and credit reductions. In calculating the savings and energy efficiency credits for Custom measures, please contact the AEP Ohio Business Incentives for Energy Efficiency Program office to determine appropriate baseline for savings.

### Funding is limited

- The limit for each self-direct project is \$225,000.
- The limit for each business entity (corporation, LLC, partnership, etc) in the Self-Direct Program is based on their tariff, as indicated below:

TARIFF	LIMIT PER BUSINESS ENTITY
General Service Tariffs 1, 2, & 3	\$450,000 per year
Any Other Tariff General Service Tariff 4	\$450,000 overall for years 2009-2011

- A business entity with facilities in both categories can qualify for both limits. All facilities served in one category for a business entity are combined to determine the limit.
- Limits are utility-specific, so there is a separate limit for facilities served by Ohio Power and those served by Columbus Southern Power.
- A sliding scale credit reduction will be incorporated when the calculated energy efficiency credits exceed \$160,000 per project.

### Application

Applications should be submitted by Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. Project documentation, such as copies of dated invoices for the purchase and installation of the measures and/or product specification sheets, is required. AEP Ohio reserves the right to request additional backup information, supporting detail, calculations, manufacturer specification sheets or any other information prior to any credit payment.

The location or business name on the invoice must be consistent with the application information. Applications and all required supporting documentation should be received by November 15, 2011 to be applicable for the 2011 program year.

A signed application with documentation verifying installation of the project including, but not limited to, equipment, invoices, approvals, and other related information must be submitted to AEP Ohio prior to application approval.

The project invoice should provide sufficient detail to separate the incremental project cost from the cost of other services such as repairs and building code compliance. AEP Ohio reserves the right to request additional supporting documentation as deemed necessary to ensure measure eligibility and verify that the expected energy savings will occur. Confidential information contained in any documents associated with this application will be protected from public filings. However, this information may be disclosed to the Public Utilities Commission of Ohio for further review and approval. Requested information could include: equipment purchase dates, installation dates, proof that the equipment is operational, manufacturer specifications, warranty information, and proof of customer co-payment.

The customer understands and agrees that all other terms and conditions, as specified in the application, including all attachments and exhibits attached to this application, serves as a contract for the customer's commitment of energy resources to AEP Ohio, shall apply.



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

### Application Review Process

AEP Ohio will review Applications for eligibility and completeness. Completed applications will be reviewed in the order received. Funds are reserved for the project when AEP Ohio receives a complete 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. Applications must be completed and all information received by the deadlines defined above to begin processing. Applicants are encouraged to call the program hotline if they have any questions about documentation requirements.

### Inspections

AEP Ohio reserves the right to inspect all projects to verify compliance with the program rules and verify the accuracy of project documentation. This may include installation inspections, verification of detailed lighting layout descriptions, metering, data collection, interviews, and utility bill data analysis. 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 energy efficiency credits by AEP Ohio. Customer understands and agrees that Program installations may also be subject to inspections by the PUCO or their designee, and photographs of installation may be required.

### 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 equipment removed (and baseline) and equipment installed based on the current operation of the facility. A listing of the pre-existing information requirements is provided at the end of the custom application section. If the previous equipment was at the end of its useful life, the applicant must use, as the baseline, the equipment that would meet the applicable federal and local energy codes unless an "as found" baseline is being used by the applicant. If the applicant is using an "as found" baseline, additional specific information on the pre-existing information must be provided.

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. The method and assumptions used by the applicant to calculate the annual savings will be reviewed by AEP Ohio. AEP Ohio is solely responsible for the final determination of the annual energy savings to be used in calculating the energy efficiency credit amount. AEP Ohio also reserves the right to require specific measurement and verification activities including monitoring the retrofit and determining the credit. Verification of the preexisting consumption may also be required.

AEP Ohio may need to conduct inspections of projects to verify equipment and operation conditions. For Custom and "as-found" projects, the applicant is required to provide information in order to allow AEP Ohio to verify the baseline usage of the pre-existing equipment.. Customers are encouraged to submit projects that warrant special treatment (i.e., non-typical projects) to be considered on a case-by-case basis by AEP Ohio.

### Tax Liability

Credits are taxable and, if more than \$600, will be reported to the IRS unless the customer is exempt. AEP Ohio is not responsible for any taxes that may be imposed on the Payee as a result of the receipt of the energy efficiency credits.

### Disclaimer

AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for energy efficiency credits under this program. AEP Ohio has no obligations regarding and does not endorse any claims, promises, work, or equipment made, performed, or furnished by any contractors or equipment vendors or manufacturers that sell or install any energy efficiency measures and does not endorse or guarantee same. AEP Ohio is not responsible for the proper disposal/recycling of any waste generated as a result of this project. AEP Ohio is not liable for any damage caused by the operation or malfunction of the installed equipment.



## Self-Direct Program Project 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>Business Type (select one)</b>	<b>Tax Status (from W9)</b>	<b>How Did You Hear?</b>
LARGE OFFICE <input type="checkbox"/>	CORPORATION (Inc., PC, Etc.) <input type="checkbox"/>	AEP Account Representative <input type="checkbox"/>
SMALL OFFICE <input type="checkbox"/>	TAX EXEMPT <input type="checkbox"/>	Contractor <input type="checkbox"/>
SCHOOL <input type="checkbox"/>	INDIVIDUAL <input type="checkbox"/>	Website <input type="checkbox"/>
SMALL RETAIL/SERVICE <input type="checkbox"/>	OTHER (may receive 1099) _____	Other _____
LARGE RETAIL/SERVICE <input type="checkbox"/>		
HOTEL/MOTEL <input type="checkbox"/>	<b>Operating Days</b>	
MEDICAL - Hospital <input type="checkbox"/>	Seven days/week <input type="checkbox"/>	
MEDICAL - Nursing Home <input type="checkbox"/>	Five days/week <input type="checkbox"/>	
ASSEMBLY/MEETING PLACE <input type="checkbox"/>		
RESTAURANT <input type="checkbox"/>	<b>Operating Hours</b>	<b>Square Footage</b>
GROCERY <input type="checkbox"/>	One shift (8h /day) <input type="checkbox"/>	
CONDITIONED WAREHOUSE <input type="checkbox"/>	Two shifts (16h/day) <input type="checkbox"/>	Affected Area S.F. _____
UNCONDITIONED WAREHOUSE <input type="checkbox"/>	Three shifts (24h/day) <input type="checkbox"/>	
INDUSTRIAL/MANUFACTURING <input type="checkbox"/>		
COLLEGE/UNIVERSITY <input type="checkbox"/>	<b>Building Operating Hours</b> _____	
GOVERNMENT/MUNICIPAL <input type="checkbox"/>		
OTHER/MISCELLANEOUS <input type="checkbox"/>		

NAME OF APPLICANT'S BUSINESS		PROJECT NAME (IF APPLICABLE)	
NAME AS IT APPEARS ON UTILITY BILL	AEP OHIO ACCT #*	APPLICANT TAXPAYER ID # (SSN/FEDERAL ID)	
MAILING ADDRESS		CITY	STATE ZIP
INSTALLATION ADDRESS		CITY	STATE ZIP

### CUSTOMER CONTACT

Please provide all contacts we may need to process for this project.

NAME OF CONTACT PERSON - Preferred Contact for Documentation		TITLE OF CONTACT	
CONTACT PHONE #	EXT.	CONTACT FAX #	CONTACT EMAIL ADDRESS

### CONTRACTOR INFORMATION

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

If there are questions about the application who should we contact? Customer ☐ Contractor ☐

**As an eligible customer, I verify the information is correct and request consideration for participation under this program.**

CUSTOMER SIGNATURE (AEP OHIO CUSTOMER)	PRINT NAME
TOTAL INCENTIVE REQUESTED**	DATE
COMPLETION DATE	PROJECT COST

\* AEP Ohio Account Number where measure is installed

\*\* Incentive cannot exceed 50 percent of the total Incremental cost or other caps described in the Terms and Conditions.



## Self-Direct Program Project Application

### SELF-DIRECT APPLICATION AGREEMENT

As an eligible AEP Ohio customer, I certify that the installation of the indicated energy efficiency measures, which will be demonstrated by the supporting documentation required by AEP Ohio. I certify that the work, was completed on this project on or after January 1, 2008. The energy efficiency measures are for use on-site and not for resale. I understand that project documentation, including copies of dated invoices for the purchase and installation of the measures and product specification sheets, is required. Further documentation requirements can be found at the program website [www.gridsmarthio.com](http://www.gridsmarthio.com) or by calling the program hotline.

I understand that the location or business name on the invoice must be consistent with the application information. Final Applications and all required supporting documentation should be received by **Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive by the PUCO.**

I agree to verification by the utility or their representatives of both sales transactions and equipment installation.

I understand that these energy efficiency credits are available to all eligible customers who pay the Energy Efficiency and Peak Demand Reduction (EE/PDR) rider and receive their electricity over AEP Ohio wires regardless of which retail electric supplier the customer has chosen to purchase power from.

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 is exempt. I understand that energy efficiency credits assume related energy benefits over a period of 5 years or for the life of the product, whichever is less.

I agree that if: I remove the related product(s) identified in my application before a period of 5 years or the end of the product life, whichever is less, I shall refund a prorated amount of energy efficiency credits to AEP Ohio based on the actual period of time in which the related product(s) were installed and operating. 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.

AEP Ohio reserves the right to refuse payment and participation if the customer or contractor violates Program rules and requirements. AEP Ohio is not liable for energy efficiency credits promised to customers as a result of misrepresentation of the Program.

Customer and customer's contractor shall be responsible to comply with any applicable codes or ordinances.

All submissions become the property of AEP Ohio. Keep a copy for your records.

I understand that the Application and all required documentation should be received by the AEP Ohio Business Incentives for Energy Efficiency program prior to **Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive by the PUCO.** All equipment must be fully operational.





## Self-Direct Program Project Application

### SELF-DIRECT APPLICATION AGREEMENT

I understand that this project must involve a facility improvement that results in improved energy efficiency. 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 local codes and ordinances. Equipment can not under any circumstances be resold for reuse. I understand it is my responsibility to be aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at: <http://www.epa.gov/osw/hazwaste.htm>.

AEP Ohio will pay 75% of the lesser of: 1) The calculated credit as approved by AEP Ohio subject to funding limits or 2) 50% of the incremental project cost (subject to application caps). I understand that AEP Ohio or their representatives have the right to ask for additional information at any time. AEP Ohio's Business Incentives Program for Energy Efficiency will make the final determination of energy efficiency credit levels for this project.

The program has a limited budget. Applications will be processed within the budget limits. Applications and all supporting documentation required should be received by November 15, 2011 to be eligible for funding under the current program period.

Customer understands and agrees that all other terms and conditions, as specified in the application, including all attachments and exhibits attached to this application which will serve as a contract for the Customer's commitment of energy and demand resources to AEP Ohio shall apply.

I understand that AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for energy efficiency credits under this program, and, further, that AEP Ohio has no obligations regarding any claims, promises, work, or equipment made, performed, or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures and does not endorse or guarantee same.

Energy efficiency credits will be based upon the final application and program terms and conditions, as well as the availability of funds.

Any and all energy savings generated by the project described in this application are hereby committed to AEP Ohio in order to count against its respective companies' benchmark requirements in S.B. 221.

#### ENERGY EFFICIENCY CREDITS REQUESTED

I have read and understand the program requirements and Measure Specifications and Terms and Conditions set forth in this application and agree to abide by those requirements. Furthermore, I concur that I must meet all eligibility criteria in order to be paid under this program.

**ALL EQUIPMENT MUST BE INSTALLED AND OPERATIONAL. 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. All submissions become the property of AEP Ohio. Keep a copy for your records.**

TOTAL PROJECT COST		TOTAL ENERGY EFFICIENCY CREDITS REQUESTED
CUSTOMER SIGNATURE (AEP CUSTOMER)		
PRINT NAME	DATE	ACTUAL COMPLETION DATE

Name	Street Address	City	State
MOUNT VERNON CITY SCHOOLS	305 E PLEASANT ST	MOUNT VERNON	OH
MOUNT VERNON CITY SCHOOLS	298 Martinsburg Road	MOUNT VERNON	OH
MOUNT VERNON CITY SCHOOLS	300 Newark Road	MOUNT VERNON	OH



## 6 Lamp Heavy Duty Industrial Fixture

HD Series

### Features

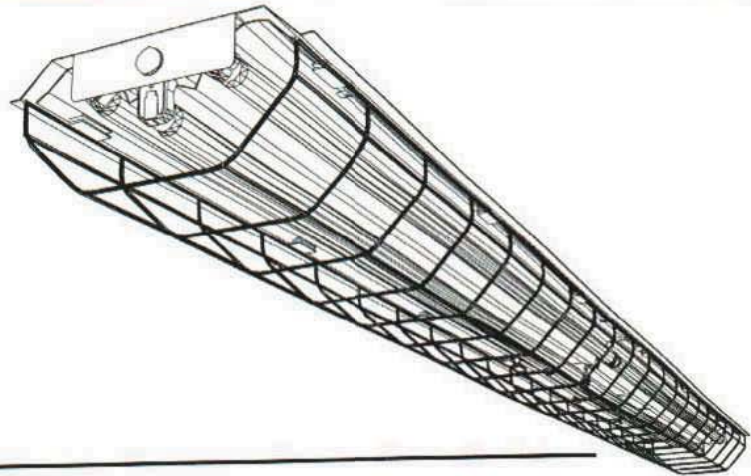
*Combines the durability of a full steel body with the performance of a specular insert*

*Superior Light Quality, 92.5% Photometric Efficiency*

*Rigid, Four-Bend Press-Brake Formed Body*

*Optional wire guard kit*

**224 Watts ( with high-lumen ballasts )**



### Technical Data

**Housing:** 20ga. (0.036") pre-painted steel die formed with sufficient knockouts for mounting and electrical supply.

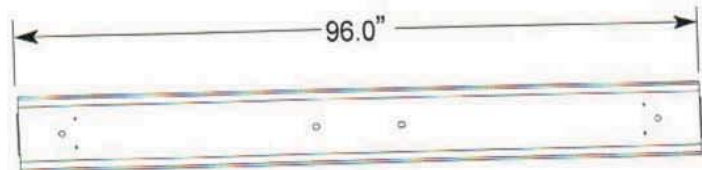
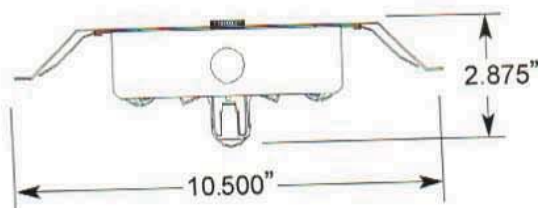
**Finish:** All cold rolled steel parts are painted with a smooth, glossy, highly reflective white paint.

**Reflector:** Can be ordered with a 95% specular, a 85% specular, or a 92% diffuse white enamel. (For maximum performance, 95% specular is recommended.) Substrate is 0.020" high quality aluminum. The reflector profile is optimized using computer analysis and manufactured using state of the art CNC equipment. A protective premask is applied to all reflective surfaces prior to manufacture.

**Construction:** The solid four-bend body provides added rigidity. The socket bars and endplates securely snap into place. The reflectors are attached to the fixture body with a tab lock system. No tools or additional fasteners are required for reflector installation and removal.

**Mounting:** Fixture can be surface, pendant, or chain suspended.

### Installation



### Highlights

Electronic ballasts available in both standard and high lumen versions

Full, solid steel fixture body

Angled lampholders for optimal performance

Tab mount, tool free reflector attachment

Computer designed, CNC formed 0.020" specular aluminum reflector (available with spread or focused design)

## 6 Lamp Heavy Duty Industrial Fixture

## HD Series

### Photometrics

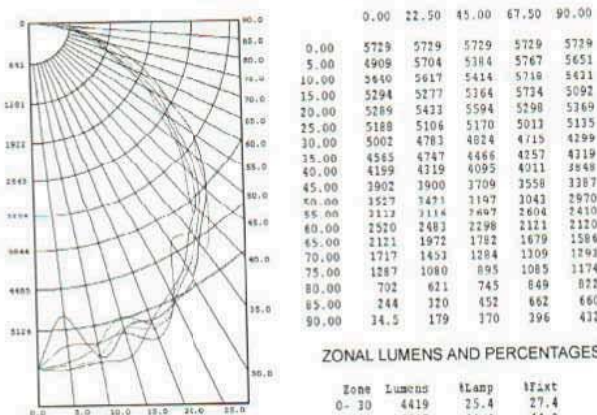


**Energy Solutions**  
Premium Lighting without the Premium Price

Energy Solutions International, Inc.  
1305 Mendota Heights Road  
Saint Paul, MN 55120

ENERGY SOLUTIONS 1' X 8' FLUORESCENT LUMINAIRE  
WITH WHITE INTERIOR, SPECULAR REFLECTORS AND NO LENS  
SIX LINEAR FLUORESCENT 32 WATT LAMPS, LUMEN RATING 2950 LMS.  
TWO GE B3321277RHSC BALLAST OPERATING AT 120 VAC AND 218 WATTS

#### CANDLEPOWER SUMMARY



#### ZONAL LUMENS AND PERCENTAGES

Zone	Lumen	Lamp	Fixt
0- 30	4419	25.4	27.4
0- 40	7207	41.4	44.8
0- 60	12535	72.0	77.9
0- 90	16017	92.1	99.5
90-120	81	0.5	0.5
90-130	81	0.5	0.5
90-150	81	0.5	0.5
90-180	81	0.5	0.5
0-180	16098	92.5	100.0

\*\* EFFICIENCY = 92.5% \*\*

#### LUMINANCE SUMMARY - CD/SQ.M.

	0	45	90
0	5439	5439	5439
45	5152	4340	4731
55	4906	4511	4188
65	4637	3993	3671
75	4197	3189	2716
85	3542	1729	1257

PAINT REFLECTANCE = 0.78 S/MH = 1.49  
SC (ALONG) = 1.27 SC (ACROSS) = 1.14

PREPARED IN PHOTOPIA FOR  
ENERGY SOLUTIONS  
ST. PAUL, MN

### Case Study

#### 250' x 40' x 25' Warehouse Space

#### Reflectances:

Ceiling	60
Walls	40
Floor	10

#### Power Strip Layout: 60 Fixtures



ESI HD Strip 1' x 8'  
(6) 32W FO32 T8 Lamps  
High Power Ballast (1.18)  
LDD: 1.12  
UPS: 1.37 watts/sq.foot  
Illuminance: **73.4fc\***

#### HID Layout: 60 Fixtures



HID High Bay Fixture  
(1) 400W Metal Halide  
LDD: 0.66  
UPS: 2.79 watts/sq.foot  
Illuminance: **80fc\***

\* Calculations made at 10,000hrs

## Ordering Information

Part Number = Fixture Size + Reflector Material + # Lamps + Lamp Wattage + Voltage + Ballast type + Options

(Example 18HDEA632277H = 1'x8' Heavy Duty Strip with an enhanced aluminum reflector, 6-32W lamps, 277 volts, and a high power ballast)

Size	Reflector	# Lamps	Lamp Watts	Voltage	Ballast
14HD - 1' x 4'	EA - Enhanced Alum	3	32	120	N - Normal
18HD - 1' x 8'	AA - Anodized Alum	6		277	H - High Ballast Factor
	WR - White Enamel				L - Low Ballast Factor

## 27621 - F32T8XL/SPX41ECO

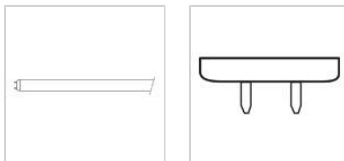
GE Ecolux® Starcoat® T8

- Passes TCLP, which can lower disposal costs.
- Provides significantly longer life than standard lamp helping to reduce maintenance costs

Photo  
Not Available

Rendering

High Color



### CAUTIONS & WARNINGS

#### Caution

- Lamp may shatter and cause injury if broken
  - Wear safety glasses and gloves when handling lamp.
  - Do not use excessive force when installing lamp.

#### Warning

- Risk of Electric Shock
  - Turn power off before inspection, installation or removal.

### GRAPHS & CHARTS

Graphs\_Spectral Power Distribution

### GENERAL CHARACTERISTICS

Lamp Type	Linear Fluorescent - Straight
Bulb	Linear
Base	T8
Rated Life	Medium Bi-Pin (G13)
Rated Life (instant start) @ Time	40000.0 hrs
Rated Life (rapid start) @ Time	25000 h @ 3 h
	36000 h @ 12 h
	40000.0 @ 3.0/45000.0 @ 12.0 h
Bulb Material	Soda lime
Starting Temperature (MIN)	10.0 K
LEED-EB MR Credit	26 picograms Hg per mean lumen hour
Additional Info	TCLP compliant

### PHOTOMETRIC CHARACTERISTICS

Initial Lumens	2950.0
Mean Lumens	2800.0
Nominal Initial Lumens per Watt	92
Color Temperature	4100.0 K
Color Rendering Index (CRI)	85.0
S/P Ratio (Scotopic/Photopic Ratio)	1.8

### ELECTRICAL CHARACTERISTICS

Wattage	32.0
Voltage	137.0
Open Circuit Voltage (rapid start) Min @ Temperature	315 V @ 10 nV
Cathode Resistance Ratio - Rh/ Rc (MIN)	4.25
Cathode Resistance Ratio - Rh/ Rc (MAX)	6.5
Current Crest Factor (MAX)	1.7

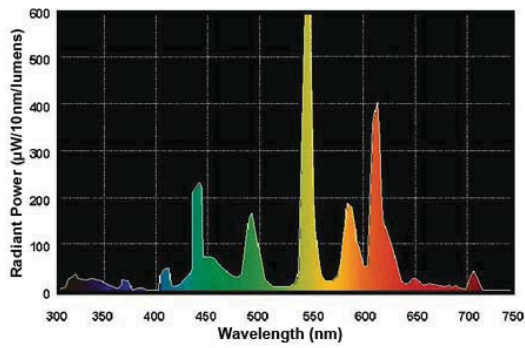
### DIMENSIONS

Maximum Overall Length (MOL)	47.7800 in(1213.6 mm)
Minimum Overall Length	47.6700 in(1210.8 mm)
Nominal Length	48.000 in(1219.2 mm)
Bulb Diameter (DIA) (MIN)	0.940 in(23.9 mm)
Bulb Diameter (DIA) (MAX)	1.100 in(27.9 mm)
Bulb Diameter (DIA)	1.000 in(25.4 mm)
Max Base Face to Base Face (A)	47.220 in(1199.4 mm)
Face to End of Opposing Pin (B) (MIN)	47.400 in(1204.0 mm)
Face to End of Opposing Pin (B) (MAX)	47.500 in(1206.5 mm)
End of Base Pin to End of Opposite Pin End (C)	47.670 in(1210.8 mm)

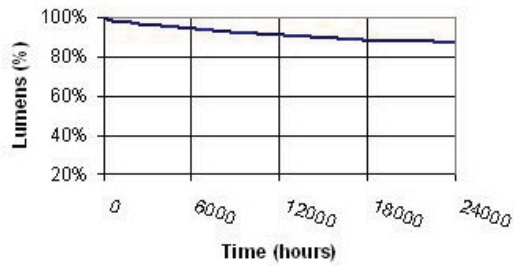
### PRODUCT INFORMATION

Product Code	27621
Description	F32T8XL/SPX41ECO
ANSI Code	1005-2
Standard Package	Case
Standard Package GTIN	10043168276211
Standard Package Quantity	36
Sales Unit	Unit
No Of Items Per Sales Unit	1
No Of Items Per Standard Package	36
UPC	043168276214

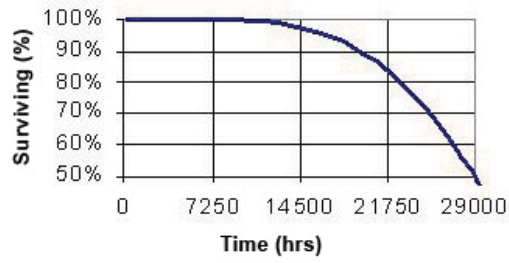




Graphs\_Lumen Maintenance



Graphs\_Lamp Mortality





**Case No.:** 12-0858-EL-EEC

Mercantile Customer: MOUNT VERNON CITY SCHOOLS

Electric Utility: Ohio Power

Program Title or Description: AEP Ohio Business Incentives for Energy Efficiency: Self Direct Program

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. [10-834-EL-POR](#)

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at [ee-pdr@puc.state.oh.us](mailto:ee-pdr@puc.state.oh.us).

## Section 1: Company Information

Name: MOUNT VERNON CITY SCHOOLS

Principal address: 302 Martinsburg Rd, Mt Vernon, Oh 43050

Address of facility for which this energy efficiency program applies: 305 E Pleasant St, Mount Vernon, Oh 43050-1822

Name and telephone number for responses to questions:

Stephen Short, Mount Vernon City Schools, (740) 397-7422

Electricity use by the customer (check the box(es) that apply):

- ☐ The customer uses more than seven hundred thousand kilowatt hours per year at our facility. (Please attach documentation.)

See Confidential and Proprietary Attachment 4 – Calculation of Rider Exemption and UCT which provides the facility consumption for the last three years, benchmark kWh, and the last 12 months usage.

- ☒ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.) When checked, see Attachment 6 – Supporting Documentation for a listing of the customer's name and service addresses of other accounts in the AEP Ohio service territory.

## Section 2: Application Information

A) The customer is filing this application (choose which applies):

- ☐ Individually, on our own.
- ☒ Jointly with our electric utility.

B) Our electric utility is: Ohio Power Company

The application to participate in the electric utility energy efficiency program is "Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application."

C) The customer is offering to commit (choose which applies):

- ☐ Energy savings from our energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
- ☐ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
- ☒ Both the energy savings and the demand reduction from the customer's energy efficiency program. (Complete all sections of the Application.)

### Section 3: Energy Efficiency Programs

A) The customer's energy efficiency program involves (choose whichever applies):

- ☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, 7/11/2008 and the date on which the customer would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).

The remaining life of the equipment varies and is not known with certainty. The future replacement date is unknown and has historically been at the end of equipment life. Replacement was completed early to achieve energy savings and to reduce future maintenance costs.

- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):
- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):
- ☐ Behavioral or operational improvement.

B) Energy savings achieved/to be achieved by your energy efficiency program:

- 1) If you checked the box indicating that your project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) - (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Unit Quantity (watts) = Existing (watts x units) - Installed (watts x units)

kWh Reduction (Annual Savings) = Unit Quantity x (Deemed kWh/Unit)

Annual savings: 20,656 kWh

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for annual energy savings calculations and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.



- 2) If you checked the box indicating that you installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: kWh

Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.

- 3) If you checked the box indicating that your project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: kWh

Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.

- 4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined.

## Section 4: Demand Reduction/Demand Response Programs

A) The customer's program involves (check the one that applies):

- ☒ Coincident peak-demand savings from the customer's energy efficiency program.
- ☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
- ☐ Potential peak-demand reduction check the one that applies):

➤ Choose one or more of the following that applies:

- ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.
- ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?

The coincident peak-demand savings are permanent installations that reduce demand through energy efficiency and were installed on the date specified in Section 3 A above.

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

$$\text{Unit Quantity (watts)} = \text{Existing (watts x units)} - \text{Installed (watts x units)}$$

$$\text{KW Demand Reduction} = \frac{\text{Unit Quantity (watts)}}{\text{(watts)}} \times \text{(Deemed KW/Unit)}$$

6.7 kW

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for peak demand reduction calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

## **Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)**

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

☒ Option 1: A cash rebate reasonable arrangement.

OR

☐ Option 2: An exemption from the cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

B) The value of the option that the customer is are seeking is:

Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):

☐ A cash rebate of \$\_\_\_\_\_. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

OR

☒ A cash rebate valued at no more than 50% of the total project cost, which is equal to \$ 1,965.60. (Attach documentation and calculations showing how this payment amount was determined.)

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for incentive calculations for this mercantile program.

Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.

☐ An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for \_\_\_\_ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

OR

☐ A commitment payment valued at no more than \$\_\_\_\_\_. (Attach documentation and calculations showing how this payment amount was determined.)

OR

☐ Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of an ongoing efficiency program that is practiced by our organization. (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

## Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: \_\_\_\_\_  
(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: 2.8 (Skip to Subsection 2.)

### Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were \_\_\_\_\_.

Our program costs were \_\_\_\_\_.

The utility's incremental measure costs were \_\_\_\_\_.

### Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were \$ 5,860.58

The utility's program costs were \$ 123.93

The utility's incentive costs/rebate costs were \$ 1,965.60.

## Section 7: Additional Information

Please attach the following supporting documentation to this application:

- Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment.

See Attachment 1 - Self Direct Project Overview and Commitment for a description of the project. See Attachment 6 - Supporting Documentation, for the specifications of the replacement equipment 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed. Due to the length of time since the equipment replacement, the make, model and year of the replaced equipment is not available.

- A copy of the formal declaration or agreement that commits your program to the electric utility, including:

- 1) any confidentiality requirements associated with the agreement;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All confidentiality requirements are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.)

- 2) a description of any consequences of noncompliance with the terms of the commitment;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All consequences of noncompliance are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;

None required because the resources committed are permanent installations that reduce demand through increased efficiency during the Company's peak summer demand period generally defined as May through September and do not require specific coordination and communication to provide demand reduction capabilities to the Company.

- 4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,

See Attachment 2 - Self Direct Program Blank Application including Rules and Requirements granting such permission pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 5) a commitment by you to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

See Attachment 1 - Self Direct Project Overview and Commitment for the commitment to comply with any information and compliance reporting requirements imposed by rule or as part of the approval of this arrangement by the Public Utilities Commission of Ohio.

- A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

The Company applies the same methodologies, protocols, and practices to Self Direct Program retrospective projects that are screened and submitted for approval as it does to prospective projects submitted through its Prescriptive and Custom Programs. The Commission has not published a technical reference manual for use by the Company so deviations can not be identified. The project submitted is a prescriptive project and energy savings are determined as described in Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.



# Public Utilities Commission

Application to Commit  
Energy Efficiency/Peak Demand  
Reduction Programs  
(Mercantile Customers Only)

Case No.: 12-0858-EL-EEC

State of Ohio :

JOO CHING YONG, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:  
  
KEMA Services, Inc agent of Ohio Power
2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.

Y. Ching Yong CEM, LEED AP BD+C  
Signature of Affiant & Title

Sworn and subscribed before me this 6<sup>th</sup> day of March, 2012 Month/Year

[Signature]  
Signature of official administering oath

Kimberly Flowers,  
Print Name and Title  
Outreach  
Coordinator

My commission expires on June 01, 2016







A unit of American Electric Power

Attachment 1  
Self Direct Project Overview & Commitment  
Page 1 of 1

### Self Direct Project Overview & Commitment

The Public Utility Commission of Ohio (PUCO) will soon review your application for participation in AEP Ohio's Energy Efficiency/Peak Demand Response program. Based on your submitted project, please select by initialing one of the two options below, sign and fax to 877-607-0740.

Customer Name	MOUNT VERNON CITY SCHOOLS		
Project Number	AEP-11-05352		
Customer Premise Address	305 E PLEASANT ST. MOUNT VERNON, OH 43050	822	
Customer Mailing Address	302 Martinsburg Rd, Mt Vernon, OH 43050		
Date Received	12/16/2011		
Project Installation Date	7/11/2008		
Annual kWh Reduction	20,656		
Total Project Cost	\$5,616.00		
Unadjusted Energy Efficiency Credit (EEC) Calculation	\$2,620.80		
Simple Payback (yrs)	6.8		
Utility Cost Test (UCT)	2.8		
Please Choose One Option Below and Initial			
Option 1 - Self Direct EEC: 75%	\$1,965.60	<input checked="" type="checkbox"/>	Initial: <i>[Signature]</i>
Option 2 - EE/PDR Rider Exemption	#N/A	<input type="checkbox"/>	Initial: _____

**Note:** This is a one time selection. By selecting Option 1, the customer will receive payment in the amount stated above. Selection of Option 2: EE/PDR rider exemption, will result in the customer not being eligible to participate in any other energy efficiency programs offered by AEP Ohio during the period of exemption. In addition, the term of Option 2: EE/PDR rider exemption is subject to ongoing review for compliance and could be changed by the PUCO.

If Option 1 has been selected, will the Energy Efficiency Funds selected help you move forward with other energy efficiency projects? \_\_\_ YES \_\_\_ NO

#### Project Overview:

The Self Direct (Prescriptive) project that the above has completed and applied is as follows.  
(32) 400-watt metal halides fixtures were replaced with 6L 4' 32W T8 hi-bay fixtures.

The documentation that was included with the application proved that the energy measures applied for were purchased and installed.

By signing this document, the Mercantile customer affirms its intention to commit and integrate the above listed energy efficiency resources into the utility's peak demand reduction, demand response, and energy efficiency programs. By signing, the Mercantile customer also agrees to serve as a joint applicant in any filings necessary to secure approval of this arrangement by the Public Utilities Commission of Ohio, and comply with any information and compliance reporting requirements imposed by rule or as part of that approval.

Ohio Power Company

By: *[Signature]*

Title: Manager

Date: Februarv 29, 2012

MOUNT VERNON CITY SCHOOLS

By: *[Signature]*

Title: Superintendent

Date: 2-28-12





## Self-Direct Program Project Application

**Jan 2011 - Dec 2011**

### Step 1: Check Project and Equipment Eligibility

- ✓ Project must be a facility improvement that results in a *permanent* reduction in electrical energy usage (kWh).
- ✓ *All installed equipment must meet or exceed the specifications given in the application* and be installed in facilities served by AEP Ohio: Customer must have a valid AEP Ohio account number on an eligible AEP Ohio non-residential rate (see terms and conditions for list of eligible rates eligibility requirements).

### Step 2: Submit Application

- ✓ Fill out the Customer Information form and the Worksheet for the measures that you are installing. You may submit the application via mail, fax or e-mail.

**Submit your application to:**  
**AEP Ohio Business Incentives for Energy Efficiency**  
**2740 Airport Drive Suite 160**  
**Columbus, OH 43219**  
**Call: (877)-607-0739**  
**Fax: (877)-607-0740**  
**Email: [gridsmartohio@kema.com](mailto:gridsmartohio@kema.com)**  
**Visit our web site at [gridsmartohio.com](http://gridsmartohio.com)**

- ✓ Submit a completed application prior to Oct 1st for any projects prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. Complete the checklist page and attach the documentation listed: customer information page, a signed Agreement and Signature page, measure worksheet, scope of work (type, quantity and wattage of old and new equipment), dated and itemized invoices for the purchase and installation of all equipment installed and specification sheets for all equipment installed showing that it meets the program specifications.

### Step 3: Project Review

- ✓ The program team will review your Application. For some projects, an inspection will be part of the review, and you will be contacted to schedule it.
- ✓ After approval by AEP Ohio, the customer will be sent an Overview and Commitment form to sign for all self-direct projects. After the Overview and Commitment form is returned the project will be submitted to the Public Utilities Commission of Ohio (PUCO) for consideration. The PUCO will assign a case number and review the project details that were prepared by AEP Ohio. The PUCO may request additional information, approve or reject the energy efficiency credits.

### Step 4: Receive Energy Efficiency Credits

- ✓ The program team will issue the energy efficiency credits, within four to six weeks after PUCO project approval.
- ✓ In lieu of a one-time energy efficiency credit, you may elect to seek an exemption from the Energy Efficiency / Peak Demand Reduction (EE/ PDR) Rider for the associated electric account(s) for a defined period of time as stated on this Application. For this exemption the Energy Efficiency Credit amount (Option 1) is compared to the estimated value of the estimated EE/PDR Rider obligation (Option 2), as calculated by AEP Ohio. The value of Option 2 will be approximately equal to the value of Option 1. If exemption is elected, the affected account is not eligible for other programs offered by AEP Ohio during the exemption period. Unless additional resources are committed, you will, after the specified number of months exempted, be again subject to the EE/ PDR Rider. New Construction projects are not eligible to elect Option 2. Major Renovation projects that do not have a representative billing history for three years prior to the project installation are also not eligible to elect Option 2.
- ✓ If the energy efficiency credit is elected, you remain in the EE/ PDR rider for the period of time that an exemption would have been in effect and may also participate in the AEP Ohio programs. However, during that period of time, you will not be allowed to elect the Option 2 exemption for any additional self-direct projects for the same account number.
- ✓ You are allowed and encouraged to consider using all or a portion of the energy credits, as received from AEP Ohio under this program, to help fund other energy efficiency and demand reduction projects you choose to initiate in the future. Future projects can also qualify for credits under the Prescriptive or Custom programs.



## Self-Direct Program Project Application

### APPLICATION CHECKLIST

APPLICATION	
<b>Required Attachments</b>	
<input type="checkbox"/>	<a href="#">Customer/Contractor Information</a>
<input type="checkbox"/>	<a href="#">Completed Energy Efficiency Credits Requested Section of Agreement and Signature Page</a>
<input type="checkbox"/>	Itemized Invoices
<input type="checkbox"/>	Equipment Specifications
<input type="checkbox"/>	Scope of Work
<b>Worksheets</b>	
<input type="checkbox"/>	<a href="#">Lighting</a>
<input type="checkbox"/>	<a href="#">HVAC</a>
<input type="checkbox"/>	<a href="#">Refrigeration</a>
<input type="checkbox"/>	<a href="#">Motors and VFD</a>
<input type="checkbox"/>	<a href="#">Custom</a>
Application Date:	_____
Completion Date:	_____
Project Incremental Cost	_____
<i>*Incomplete applications will delay processing and energy efficiency credits. Please complete and submit forms for above checked boxes.</i>	

*Please fill out if this is a revised submittal*

ORIGINAL SUBMITTAL DATE: _____
APPLICATION NUMBER (IF KNOWN): _____

**AEP Ohio Business Incentives Program for Energy Efficiency**  
**2740 Airport Drive Suite 160**  
**Columbus, OH 43219**

Phone: (877)-607-0739

Fax: (877)-607-0740

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

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



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

Columbus Southern Power and Ohio Power Company are collectively known as AEP Ohio (AEP Ohio). AEP Ohio is offering Prescriptive and Custom energy efficiency credits under the AEP Ohio Business Incentives Program for Energy Efficiency to credit the implementation of past cost-effective energy-efficiency improvements for non-residential (commercial and industrial) customers. AEP Ohio provides energy efficiency credits (EEC) for the purchase and installation of qualifying cost effective equipment in the customer's facility under the Terms and Conditions provided in this application and subject to regulatory approvals. Energy efficiency credits will only be provided in the form of a check or an Energy Efficiency/Peak Demand Reduction (EE/PDR) Rider exemption under this program.

All applications are subject to review and approval by AEP Ohio, its contractor(s)/agent(s), and the Public Utility Commission of Ohio (PUCO) prior to any EEC payments or exemptions from the EE/PDR rider in this program. Funds are limited and subject to availability.

### Program Effective Dates

The AEP Ohio Business Incentives for Energy Efficiency program EEC are offered until approved funds are exhausted or Dec 31 of each program year, whichever comes first. The effective dates of Year 3 of the program and application submittal requirements are as follows:

- Self-direct projects are projects completed since 1/1/2008. Self-direct projects are eligible to apply for EEC with this application. Future projects that are not yet completed should apply on the Prescriptive/Custom application.
- All 2011 AEP Ohio Business Incentives for Energy Efficiency program Applications should be received no later than Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. AEP Ohio reserves the right to extend or shorten this timeline.
- Subsequent program year plans will be made available toward the end of the existing program year. At the current time, AEP Ohio has a commitment to provide this program through the 2011 program year.

### Program and Project Eligibility

The Self-Direct Program applies to customer facilities served by AEP Ohio's retail electric rates who meet the minimum energy usage requirements of 700,000 kWh per year or who are part of a national account involving multiple facilities in one or more states.

The AEP Ohio Business Incentives for Energy Efficiency program offers both Prescriptive energy efficiency credits for some of the more common energy efficiency measures and Custom energy efficiency credits for those eligible improvements not included on the list of Prescriptive measures. Program credits are available under the AEP Ohio Business Incentives for Energy Efficiency program to non-residential customers served at AEP Ohio's regulated retail rates, where qualifying projects are installed in a facility in AEP Ohio's electric service territory. These credits are available to all non residential customers who pay into the (EE/PDR) rider and receive their electricity over AEP Ohio wires, regardless of which retail electric supplier the customer has chosen to purchase power from.

Custom projects must involve measures that result in a reduction in electric energy usage due to an improvement in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a Custom credit. However, projects that involve an automated control technology such as energy management system programming may be eligible for a credit. All projects must meet AEP Ohio's cost-effectiveness requirements. The project simple payback prior to the credit must pass the utility cost effectiveness test(s) determined by AEP Ohio, to qualify for credit. Normally, most projects with a simple payback prior to the credit greater than one year and less than seven years generally pass the utility cost effectiveness test(s). The peak demand hours are defined as weekdays, non-holidays 3:00 PM to 6:00 PM, June through August.

Projects involving measures covered by the Prescriptive energy efficiency credit portion of the program are not eligible for a Custom energy efficiency credit. However, the applicant has the option to apply for a Custom energy efficiency credit for whole building integrated projects or systems even if they include Prescriptive measures.

The energy efficiency credits are calculated in the following Prescriptive or Custom worksheets.



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

Project requirements under the AEP Ohio Business Incentives Program for Energy Efficiency include the following:

- Projects must involve a facility improvement that results in a permanent reduction in electrical energy usage (kWh)
- Projects that are NOT eligible for a credit include the following:
  - Fuel switching (e.g. electric to gas or gas to electric)
  - Changes in operational and/or maintenance practices or simple control modifications not involving capital costs
  - Removal or termination of existing processes, facilities, and/or operations
  - On-site electricity generation
  - Projects involving gas-driven equipment in place of or to replace electric equipment (such as a chiller)
  - Projects focused primarily on power factor improvement;
  - Projects that involve peak-shifting (and not kWh savings)
  - Renewables
  - Are required by state or federal law, building or other codes, or are standard industry practice
  - Are easily reverted/removed or are installed entirely for reasons other than improving energy efficiency
  - Include other conditions to be determined by AEP Ohio.
- Any measures installed at a facility must produce **verifiable** and **persistent** energy reduction. Measures must be sustainable and provide 100% of the energy benefits as stated in the Application for a period of at least five (5) years or for the life of the product, whichever is less. If the Customer ceases to be a delivery service customer of AEP Ohio or removes the equipment or systems at any time during the 5-year period or the life of the product, the Customer may be required to return a prorated amount of credit funds to AEP Ohio.
- Customer can not apply for incentives for future projects and elect after the fact to apply for credits under this program.
- Confidential information contained in any documents associated with this application will be protected from public filings. However, this information may be disclosed to the Public Utilities Commission of Ohio for further review and approval.
- All equipment must be new. Used or rebuilt equipment is only eligible for energy efficiency credits if the energy efficiency rating of the used equipment is the same energy efficiency level of new equipment.
- All installed equipment must meet state, federal, or local codes and requirements when applicable.
- Costs associated with internal labor are not eligible.
- Projects must be installed on the AEP Ohio electric account listed on the application
- Equipment must be purchased, installed, and operating (or capable of operating in the case of seasonal uses) prior to submitting an application for energy efficiency credits
- The energy efficiency credits are paid as a one-time, one-program offer and cannot be combined with incentive payments from other AEP Ohio programs. The customer may be eligible to participate in other programs offered by AEP Ohio, as long as no project receives more than one incentive/credit.

PROGRAM ENERGY EFFICIENCY CREDITS	
Energy efficiency credit levels for one-year energy savings	See tables for prescriptive credits Custom credits \$0.08/kWh x 75%
Minimum / Maximum simple payback before energy efficiency credit applied	Must pass cost effectiveness test(s) (determined by AEP Ohio) Generally 1 year Min / 7 year Max
Maximum payout	75% of 50% of the Incremental project cost (additional caps may also apply)
Energy efficiency credit levels for projects completed since 1/1/2008	Calculated amount on the Prescriptive or Custom worksheets attached and subject to funding limits
Credit Limit	Calculated credits greater than \$160,000 per project are subject to a sliding scale credit tiering calculation.
Credit Calculation Order	Measure credit caps are applied first Project cost credit limits are applied second Credit tiering is applied third 75% factor applied to credit last



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

### Energy Efficiency Credit Limits

For both the Prescriptive and Custom measures in this application, the total energy efficiency credits shall be 75% of the lesser of: 1) The calculated credit as approved by AEP Ohio, or 2) 50% of the incremental project cost with larger projects subject to the following limits and credit reductions. In calculating the savings and energy efficiency credits for Custom measures, please contact the AEP Ohio Business Incentives for Energy Efficiency Program office to determine appropriate baseline for savings.

### Funding is limited

- The limit for each self-direct project is \$225,000.
- The limit for each business entity (corporation, LLC, partnership, etc) in the Self-Direct Program is based on their tariff, as indicated below:

TARIFF	LIMIT PER BUSINESS ENTITY
General Service Tariffs 1, 2, & 3	\$450,000 per year
Any Other Tariff General Service Tariff 4	\$450,000 overall for years 2009-2011

- A business entity with facilities in both categories can qualify for both limits. All facilities served in one category for a business entity are combined to determine the limit.
- Limits are utility-specific, so there is a separate limit for facilities served by Ohio Power and those served by Columbus Southern Power.
- A sliding scale credit reduction will be incorporated when the calculated energy efficiency credits exceed \$160,000 per project.

### Application

Applications should be submitted by Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive. Project documentation, such as copies of dated invoices for the purchase and installation of the measures and/or product specification sheets, is required. AEP Ohio reserves the right to request additional backup information, supporting detail, calculations, manufacturer specification sheets or any other information prior to any credit payment.

The location or business name on the invoice must be consistent with the application information. Applications and all required supporting documentation should be received by November 15, 2011 to be applicable for the 2011 program year.

A signed application with documentation verifying installation of the project including, but not limited to, equipment, invoices, approvals, and other related information must be submitted to AEP Ohio prior to application approval.

The project invoice should provide sufficient detail to separate the incremental project cost from the cost of other services such as repairs and building code compliance. AEP Ohio reserves the right to request additional supporting documentation as deemed necessary to ensure measure eligibility and verify that the expected energy savings will occur. Confidential information contained in any documents associated with this application will be protected from public filings. However, this information may be disclosed to the Public Utilities Commission of Ohio for further review and approval. Requested information could include: equipment purchase dates, installation dates, proof that the equipment is operational, manufacturer specifications, warranty information, and proof of customer co-payment.

The customer understands and agrees that all other terms and conditions, as specified in the application, including all attachments and exhibits attached to this application, serves as a contract for the customer's commitment of energy resources to AEP Ohio, shall apply.



## Self-Direct Program Project Application

# TERMS AND CONDITIONS

### Application Review Process

AEP Ohio will review Applications for eligibility and completeness. Completed applications will be reviewed in the order received. Funds are reserved for the project when AEP Ohio receives a complete 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. Applications must be completed and all information received by the deadlines defined above to begin processing. Applicants are encouraged to call the program hotline if they have any questions about documentation requirements.

### Inspections

AEP Ohio reserves the right to inspect all projects to verify compliance with the program rules and verify the accuracy of project documentation. This may include installation inspections, verification of detailed lighting layout descriptions, metering, data collection, interviews, and utility bill data analysis. 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 energy efficiency credits by AEP Ohio. Customer understands and agrees that Program installations may also be subject to inspections by the PUCO or their designee, and photographs of installation may be required.

### 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 equipment removed (and baseline) and equipment installed based on the current operation of the facility. A listing of the pre-existing information requirements is provided at the end of the custom application section. If the previous equipment was at the end of its useful life, the applicant must use, as the baseline, the equipment that would meet the applicable federal and local energy codes unless an "as found" baseline is being used by the applicant. If the applicant is using an "as found" baseline, additional specific information on the pre-existing information must be provided.

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. The method and assumptions used by the applicant to calculate the annual savings will be reviewed by AEP Ohio. AEP Ohio is solely responsible for the final determination of the annual energy savings to be used in calculating the energy efficiency credit amount. AEP Ohio also reserves the right to require specific measurement and verification activities including monitoring the retrofit and determining the credit. Verification of the preexisting consumption may also be required.

AEP Ohio may need to conduct inspections of projects to verify equipment and operation conditions. For Custom and "as-found" projects, the applicant is required to provide information in order to allow AEP Ohio to verify the baseline usage of the pre-existing equipment.. Customers are encouraged to submit projects that warrant special treatment (i.e., non-typical projects) to be considered on a case-by-case basis by AEP Ohio.

### Tax Liability

Credits are taxable and, if more than \$600, will be reported to the IRS unless the customer is exempt. AEP Ohio is not responsible for any taxes that may be imposed on the Payee as a result of the receipt of the energy efficiency credits.

### Disclaimer

AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for energy efficiency credits under this program. AEP Ohio has no obligations regarding and does not endorse any claims, promises, work, or equipment made, performed, or furnished by any contractors or equipment vendors or manufacturers that sell or install any energy efficiency measures and does not endorse or guarantee same. AEP Ohio is not responsible for the proper disposal/recycling of any waste generated as a result of this project. AEP Ohio is not liable for any damage caused by the operation or malfunction of the installed equipment.





## Self-Direct Program Project 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>Business Type (select one)</b>	<b>Tax Status (from W9)</b>	<b>How Did You Hear?</b>
LARGE OFFICE <input type="checkbox"/>	CORPORATION (Inc., PC, Etc.) <input type="checkbox"/>	AEP Account Representative <input type="checkbox"/>
SMALL OFFICE <input type="checkbox"/>	TAX EXEMPT <input type="checkbox"/>	Contractor <input type="checkbox"/>
SCHOOL <input type="checkbox"/>	INDIVIDUAL <input type="checkbox"/>	Website <input type="checkbox"/>
SMALL RETAIL/SERVICE <input type="checkbox"/>	OTHER (may receive 1099) _____	Other _____
LARGE RETAIL/SERVICE <input type="checkbox"/>		
HOTEL/MOTEL <input type="checkbox"/>	<b>Operating Days</b>	
MEDICAL - Hospital <input type="checkbox"/>	Seven days/week <input type="checkbox"/>	
MEDICAL - Nursing Home <input type="checkbox"/>	Five days/week <input type="checkbox"/>	
ASSEMBLY/MEETING PLACE <input type="checkbox"/>		
RESTAURANT <input type="checkbox"/>	<b>Operating Hours</b>	<b>Square Footage</b>
GROCERY <input type="checkbox"/>	One shift (8h /day) <input type="checkbox"/>	Affected Area S.F. _____
CONDITIONED WAREHOUSE <input type="checkbox"/>	Two shifts (16h/day) <input type="checkbox"/>	
UNCONDITIONED WAREHOUSE <input type="checkbox"/>	Three shifts (24h/day) <input type="checkbox"/>	
INDUSTRIAL/MANUFACTURING <input type="checkbox"/>		
COLLEGE/UNIVERSITY <input type="checkbox"/>	<b>Building Operating Hours</b> _____	
GOVERNMENT/MUNICIPAL <input type="checkbox"/>		
OTHER/MISCELLANEOUS <input type="checkbox"/>		

NAME OF APPLICANT'S BUSINESS		PROJECT NAME (IF APPLICABLE)	
NAME AS IT APPEARS ON UTILITY BILL	AEP OHIO ACCT #*	APPLICANT TAXPAYER ID # (SSN/FEDERAL ID)	
MAILING ADDRESS		CITY	STATE ZIP
INSTALLATION ADDRESS		CITY	STATE ZIP

### CUSTOMER CONTACT

Please provide all contacts we may need to process for this project.

NAME OF CONTACT PERSON - Preferred Contact for Documentation		TITLE OF CONTACT	
CONTACT PHONE #	EXT.	CONTACT FAX #	CONTACT EMAIL ADDRESS

### CONTRACTOR INFORMATION

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

If there are questions about the application who should we contact? Customer ☐ Contractor ☐

**As an eligible customer, I verify the information is correct and request consideration for participation under this program.**

CUSTOMER SIGNATURE (AEP OHIO CUSTOMER)	PRINT NAME
TOTAL INCENTIVE REQUESTED**	DATE
COMPLETION DATE	PROJECT COST

\* AEP Ohio Account Number where measure is installed

\*\* Incentive cannot exceed 50 percent of the total Incremental cost or other caps described in the Terms and Conditions.



## Self-Direct Program Project Application

### SELF-DIRECT APPLICATION AGREEMENT

As an eligible AEP Ohio customer, I certify that the installation of the indicated energy efficiency measures, which will be demonstrated by the supporting documentation required by AEP Ohio. I certify that the work, was completed on this project on or after January 1, 2008. The energy efficiency measures are for use on-site and not for resale. I understand that project documentation, including copies of dated invoices for the purchase and installation of the measures and product specification sheets, is required. Further documentation requirements can be found at the program website [www.gridsmarthio.com](http://www.gridsmarthio.com) or by calling the program hotline.

I understand that the location or business name on the invoice must be consistent with the application information. Final Applications and all required supporting documentation should be received by **Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive by the PUCO.**

I agree to verification by the utility or their representatives of both sales transactions and equipment installation.

I understand that these energy efficiency credits are available to all eligible customers who pay the Energy Efficiency and Peak Demand Reduction (EE/PDR) rider and receive their electricity over AEP Ohio wires regardless of which retail electric supplier the customer has chosen to purchase power from.

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 is exempt. I understand that energy efficiency credits assume related energy benefits over a period of 5 years or for the life of the product, whichever is less.

I agree that if: I remove the related product(s) identified in my application before a period of 5 years or the end of the product life, whichever is less, I shall refund a prorated amount of energy efficiency credits to AEP Ohio based on the actual period of time in which the related product(s) were installed and operating. 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.

AEP Ohio reserves the right to refuse payment and participation if the customer or contractor violates Program rules and requirements. AEP Ohio is not liable for energy efficiency credits promised to customers as a result of misrepresentation of the Program.

Customer and customer's contractor shall be responsible to comply with any applicable codes or ordinances.

All submissions become the property of AEP Ohio. Keep a copy for your records.

I understand that the Application and all required documentation should be received by the AEP Ohio Business Incentives for Energy Efficiency program prior to **Oct 1st for any projects completed prior to Jan 1, 2009, and Nov 15th for any projects completed Jan 1, 2009 or later. Any applications received after the deadlines may not be submitted to the PUCO by December 31, 2011 and could jeopardize approval of any incentive by the PUCO.** All equipment must be fully operational.



## Self-Direct Program Project Application

### SELF-DIRECT APPLICATION AGREEMENT

I understand that this project must involve a facility improvement that results in improved energy efficiency. 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 local codes and ordinances. Equipment can not under any circumstances be resold for reuse. I understand it is my responsibility to be aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at: <http://www.epa.gov/osw/hazwaste.htm>.

AEP Ohio will pay 75% of the lesser of: 1) The calculated credit as approved by AEP Ohio subject to funding limits or 2) 50% of the incremental project cost (subject to application caps). I understand that AEP Ohio or their representatives have the right to ask for additional information at any time. AEP Ohio's Business Incentives Program for Energy Efficiency will make the final determination of energy efficiency credit levels for this project.

The program has a limited budget. Applications will be processed within the budget limits. Applications and all supporting documentation required should be received by November 15, 2011 to be eligible for funding under the current program period.

Customer understands and agrees that all other terms and conditions, as specified in the application, including all attachments and exhibits attached to this application which will serve as a contract for the Customer's commitment of energy and demand resources to AEP Ohio shall apply.

I understand that AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for energy efficiency credits under this program, and, further, that AEP Ohio has no obligations regarding any claims, promises, work, or equipment made, performed, or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures and does not endorse or guarantee same.

Energy efficiency credits will be based upon the final application and program terms and conditions, as well as the availability of funds.

Any and all energy savings generated by the project described in this application are hereby committed to AEP Ohio in order to count against its respective companies' benchmark requirements in S.B. 221.

#### ENERGY EFFICIENCY CREDITS REQUESTED

I have read and understand the program requirements and Measure Specifications and Terms and Conditions set forth in this application and agree to abide by those requirements. Furthermore, I concur that I must meet all eligibility criteria in order to be paid under this program.

**ALL EQUIPMENT MUST BE INSTALLED AND OPERATIONAL. 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. All submissions become the property of AEP Ohio. Keep a copy for your records.**

TOTAL PROJECT COST		TOTAL ENERGY EFFICIENCY CREDITS REQUESTED
CUSTOMER SIGNATURE (AEP CUSTOMER)		
PRINT NAME	DATE	ACTUAL COMPLETION DATE

Name	Street Address	City	State
MOUNT VERNON CITY SCHOOLS	305 E PLEASANT ST	MOUNT VERNON	OH
MOUNT VERNON CITY SCHOOLS	298 Martinsburg Road	MOUNT VERNON	OH
MOUNT VERNON CITY SCHOOLS	300 Newark Road	MOUNT VERNON	OH

## 6 Lamp Heavy Duty Industrial Fixture

HD Series

### Features

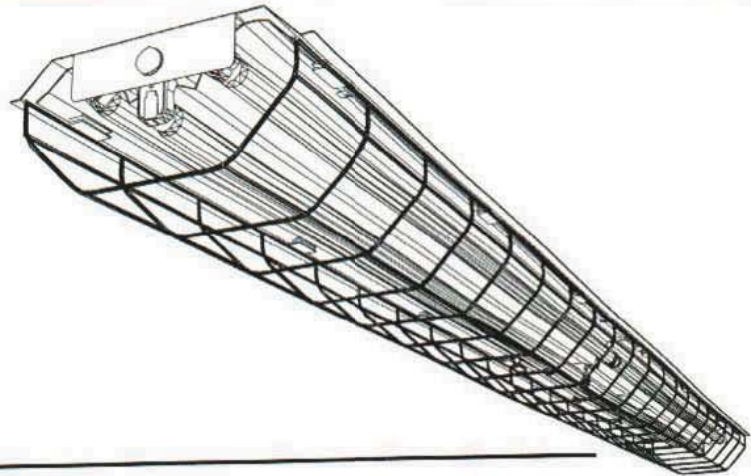
*Combines the durability of a full steel body with the performance of a specular insert*

*Superior Light Quality, 92.5% Photometric Efficiency*

*Rigid, Four-Bend Press-Brake Formed Body*

*Optional wire guard kit*

**224 Watts ( with high-lumen ballasts )**



### Technical Data

**Housing:** 20ga. (0.036") pre-painted steel die formed with sufficient knockouts for mounting and electrical supply.

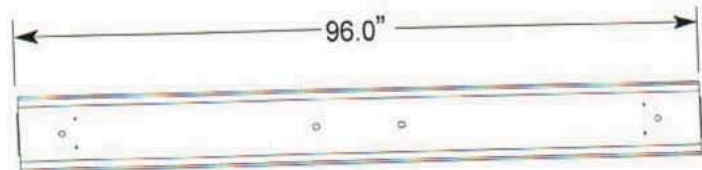
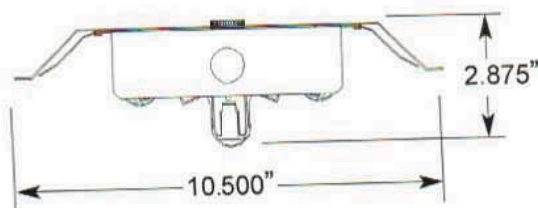
**Finish:** All cold rolled steel parts are painted with a smooth, glossy, highly reflective white paint.

**Reflector:** Can be ordered with a 95% specular, a 85% specular, or a 92% diffuse white enamel. (For maximum performance, 95% specular is recommended.) Substrate is 0.020" high quality aluminum. The reflector profile is optimized using computer analysis and manufactured using state of the art CNC equipment. A protective premask is applied to all reflective surfaces prior to manufacture.

**Construction:** The solid four-bend body provides added rigidity. The socket bars and endplates securely snap into place. The reflectors are attached to the fixture body with a tab lock system. No tools or additional fasteners are required for reflector installation and removal.

**Mounting:** Fixture can be surface, pendant, or chain suspended.

### Installation



### Highlights

Electronic ballasts available in both standard and high lumen versions

Full, solid steel fixture body

Angled lampholders for optimal performance

Tab mount, tool free reflector attachment

Computer designed, CNC formed 0.020" specular aluminum reflector (available with spread or focused design)



## 6 Lamp Heavy Duty Industrial Fixture

## HD Series

### Photometrics

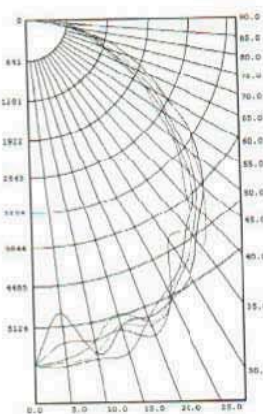


**Energy Solutions**  
Premium Lighting without the Premium Price

Energy Solutions International, Inc.  
1305 Mendota Heights Road  
Saint Paul, MN 55120

ENERGY SOLUTIONS 1' X 8' FLUORESCENT LUMINAIRE  
WITH WHITE INTERIOR, SPECULAR REFLECTORS AND NO LENS  
SIX LINEAR FLUORESCENT 32 WATT LAMPS, LUMEN RATING 2950 LMS.  
TWO GE B3321277RHSC BALLAST OPERATING AT 120 VAC AND 218 WATTS

#### CANDLEPOWER SUMMARY



	0.00	22.50	45.00	67.50	90.00
0.00	5729	5729	5729	5729	5729
5.00	4909	5704	5384	5767	5651
10.00	3640	5617	5414	5718	5621
15.00	3294	5277	5164	5724	5592
20.00	3289	5423	5594	5298	5369
25.00	3188	5106	5170	5013	5135
30.00	3002	4783	4824	4715	4399
35.00	4565	4747	4486	4257	4319
40.00	4159	4319	4095	4011	3848
45.00	3902	3900	3709	3558	3387
50.00	3527	3471	3197	3043	2970
55.00	3112	3114	2697	2604	2410
60.00	2520	2483	2298	2121	2120
65.00	2121	1972	1782	1679	1586
70.00	1717	1453	1284	1309	1293
75.00	1287	1080	895	1085	1174
80.00	702	621	745	849	822
85.00	244	320	452	662	660
90.00	34.5	179	370	396	432

#### ZONAL LUMENS AND PERCENTAGES

Zone	LUMENS	%Lamp	%Fxt
0- 30	4419	25.4	27.4
0- 40	7207	41.4	44.8
0- 60	12535	72.0	77.9
0- 90	16017	92.1	99.5
90-120	81	0.5	0.5
90-130	81	0.5	0.5
90-150	81	0.5	0.5
90-180	81	0.5	0.5
0-180	16098	92.5	100.0

\*\* EFFICIENCY = 92.5% \*\*

#### LUMINANCE SUMMARY - CD/SQ.M.

	0	45	90
0	5439	5439	5439
45	5152	4340	4731
55	4906	4511	4188
65	4637	3993	3671
75	4197	3189	2716
85	3542	1729	1257

PAINT REFLECTANCE = 0.78 S/MH = 1.49  
SC (ALONG) = 1.27 SC (ACROSS) = 1.14

PREPARED IN PHOTOPIA FOR  
ENERGY SOLUTIONS  
ST. PAUL, MN

### Case Study

#### 250' x 40' x 25' Warehouse Space

#### Reflectances:

Ceiling	60
Walls	40
Floor	10

#### Power Strip Layout: 60 Fixtures



ESI HD Strip 1' x 8'  
(6) 32W FO32 T8 Lamps  
High Power Ballast (1.18)  
LDD: 1.12  
UPS: 1.37 watts/sq.foot  
Illuminance: **73.4fc\***

#### HID Layout: 60 Fixtures



HID High Bay Fixture  
(1) 400W Metal Halide  
LDD: 0.66  
UPS: 2.79 watts/sq.foot  
Illuminance: **80fc\***

\* Calculations made at 10,000hrs

## Ordering Information

Part Number = Fixture Size + Reflector Material + # Lamps + Lamp Wattage + Voltage + Ballast type + Options

(Example 18HDEA632277H = 1'x8' Heavy Duty Strip with an enhanced aluminum reflector, 6-32W lamps, 277 volts, and a high power ballast)

Size	Reflector	# Lamps	Lamp Watts	Voltage	Ballast
14HD - 1' x 4'	EA - Enhanced Alum	3	32	120	N - Normal
18HD - 1' x 8'	AA - Anodized Alum	6		277	H - High Ballast Factor
	WR - White Enamel				L - Low Ballast Factor

## 27621 - F32T8XL/SPX41ECO

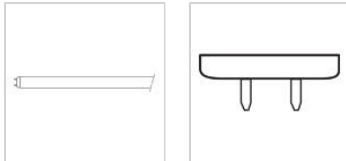
### GE Ecolux® Starcoat® T8

- Passes TCLP, which can lower disposal costs.
- Provides significantly longer life than standard lamp helping to reduce maintenance costs

Photo  
Not Available

Rendering

High Color



### CAUTIONS & WARNINGS

#### Caution

- Lamp may shatter and cause injury if broken
  - Wear safety glasses and gloves when handling lamp.
  - Do not use excessive force when installing lamp.

#### Warning

- Risk of Electric Shock
  - Turn power off before inspection, installation or removal.

### GRAPHS & CHARTS

#### Graphs\_Spectral Power Distribution

### GENERAL CHARACTERISTICS

Lamp Type	Linear Fluorescent - Straight
Bulb	Linear
Base	T8
Rated Life	Medium Bi-Pin (G13)
Rated Life (instant start) @ Time	40000.0 hrs
Rated Life (rapid start) @ Time	25000 h @ 3 h
	36000 h @ 12 h
	40000.0 @ 3.0/45000.0 @ 12.0 h
Bulb Material	Soda lime
Starting Temperature (MIN)	10.0 K
LEED-EB MR Credit	26 picograms Hg per mean lumen hour
Additional Info	TCLP compliant

### PHOTOMETRIC CHARACTERISTICS

Initial Lumens	2950.0
Mean Lumens	2800.0
Nominal Initial Lumens per Watt	92
Color Temperature	4100.0 K
Color Rendering Index (CRI)	85.0
S/P Ratio (Scotopic/Photopic Ratio)	1.8

### ELECTRICAL CHARACTERISTICS

Wattage	32.0
Voltage	137.0
Open Circuit Voltage (rapid start) Min @ Temperature	315 V @ 10 nV
Cathode Resistance Ratio - Rh/ Rc (MIN)	4.25
Cathode Resistance Ratio - Rh/ Rc (MAX)	6.5
Current Crest Factor (MAX)	1.7

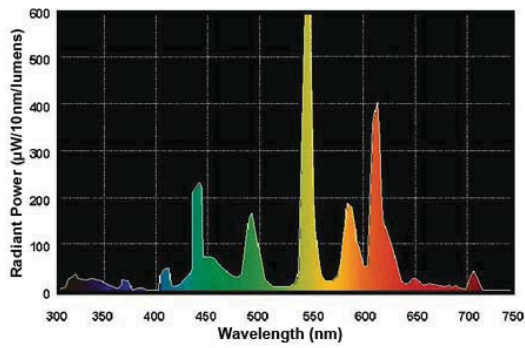
### DIMENSIONS

Maximum Overall Length (MOL)	47.7800 in(1213.6 mm)
Minimum Overall Length	47.6700 in(1210.8 mm)
Nominal Length	48.000 in(1219.2 mm)
Bulb Diameter (DIA) (MIN)	0.940 in(23.9 mm)
Bulb Diameter (DIA) (MAX)	1.100 in(27.9 mm)
Bulb Diameter (DIA)	1.000 in(25.4 mm)
Max Base Face to Base Face (A)	47.220 in(1199.4 mm)
Face to End of Opposing Pin (B) (MIN)	47.400 in(1204.0 mm)
Face to End of Opposing Pin (B) (MAX)	47.500 in(1206.5 mm)
End of Base Pin to End of Opposite Pin End (C)	47.670 in(1210.8 mm)

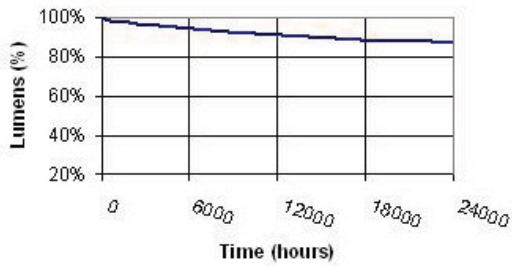
### PRODUCT INFORMATION

Product Code	27621
Description	F32T8XL/SPX41ECO
ANSI Code	1005-2
Standard Package	Case
Standard Package GTIN	10043168276211
Standard Package Quantity	36
Sales Unit	Unit
No Of Items Per Sales Unit	1
No Of Items Per Standard Package	36
UPC	043168276214

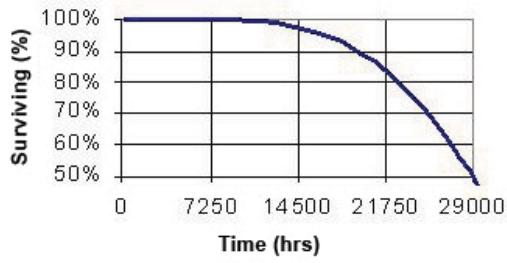




Graphs\_Lumen Maintenance



Graphs\_Lamp Mortality



**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**3/12/2012 12:16:56 PM**

**in**

**Case No(s). 12-0858-EL-EEC**

Summary: Application for Mount Vernon City Schools and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer electronically filed by Mr. Yazen Alami on behalf of Ohio Power Company