



Legal Department

American Electric Power  
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Columbus, OH 43215-2373  
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July 24, 2015

Chairman Thomas W. Johnson  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, OH 43215-3793

Re: **In the Matter of the Application of** )  
**Summit Ethanol LLC** )  
**and Ohio Power Company** ) **Case No. 15-1178-EL-EEC**  
**for Approval of a Special Arrangement** )  
**Agreement with a Mercantile Customer** )

Matthew J. Satterwhite  
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Dear Chairman Johnson,

Attached please find the Joint Application of Ohio Power Company (AEP Ohio) and the above-referenced mercantile customer 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 2015 (hereinafter "Joint Application").

Amended Substitute Senate Bill 221, codified at R.C. 4928.66, sets forth EE/PDR benchmarks that electric distribution utilities are 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/PDR 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. The attached Joint Application and affidavit conforms with AEP Ohio's version of the streamlined sample application. As requested by Commission Staff, any confidential information referenced in the Joint Application has been provided confidentially to Commission Staff for filing in Commission Docket 10-1599-EL-EEC and subject to the confidentiality protections of R.C. 4901.16 and OAC 4901-1-24(E). AEP Ohio respectfully requests that the Commission treat the two cases as associated dockets and that any confidential information provided to Staff for filing in connection with the Joint Application be subject to the protective order requested in Docket 10-1599-EL-EEC.

Cordially,

/s/ Matthew J. Satterwhite  
Matthew J. Satterwhite

Attachments



## Public Utilities Commission

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

Case No.: 15-1178-EL-EEC

Mercantile Customer: SUMMIT ETHANOL LLC

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: SUMMIT ETHANOL LLC

Principal address: 3875 State Route 65, Leipsic, Oh 45856

Address of facility for which this energy efficiency program applies: 3875 State Route 65, Leipsic, Oh 45856-9231

Name and telephone number for responses to questions:

Mark Borer, Summit Ethanol Llc, (419) 943-9201

Electricity use by our company (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, 12/31/2012 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: 685,908 kWh

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for annual energy savings calculations Attachment 6 - Supporting Documentation for custom measures work papers that provide all methodologies, protocols, and practices used in this application for custom 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  $[(\text{kWh used by less efficient new equipment}) - (\text{kWh used by the higher efficiency new equipment}) = (\text{kWh per year saved})]$ . 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  $[(\text{kWh used by less efficient new equipment}) - (\text{kWh used by higher efficiency new equipment}) = (\text{kWh per year saved})]$ . 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):

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

KW Demand Reduction = Unit Quantity (watts) x (Deemed KW/Unit (watts))

78.3 kW

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for peak demand reduction calculation, and Attachment 6 - Supporting Documentation for custom measures work papers that provide all methodologies, protocols, and practices used in this application for custom 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 seeking is:

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

☒ A cash rebate of \$ 41,154.48. (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.)

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: 4.46 (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 \$ 202,013.97

The utility's program costs were \$ 4,115.45

The utility's incentive costs/rebate costs were \$ 41,154.48.

## 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 work papers that provide all methodologies, protocols, and practices used in this application for custom 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 cannot be identified. The project submitted is a custom project and energy savings are determined as described in Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation, Attachment 6 - Supporting Documentation for custom measures work papers that provide all methodologies, protocols, and practices used in this application for custom measures, as needed.



# Public Utilities Commission

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

Case No.: 15-1178-EL-EEC

State of Ohio :

Ozgen Doreci, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

DNV GL Energy Services USA 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.

[Signature] Energy Efficiency Engineer  
Signature of Affiant & Title

Sworn and subscribed before me this 7<sup>th</sup> day of July, 2015 Month/Year

[Signature]  
Signature of official administering oath

Dawn G. Irving - Reg. Coordinator  
Print Name and Title

My commission expires on 9-3-2019



DAWN G IRVING  
NOTARY PUBLIC  
STATE OF OHIO  
Comm. Expires  
September 03, 2019



### 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	SUMMIT ETHANOL LLC		
Project Number	AEP-14-14451		
Customer Premise Address	3875 STATE ROUTE 65, LEIPSIC, OH 45856-9231		
Customer Mailing Address	3875 State Route 65, Leipsic, Oh 45856		
Date Received	10/30/2014		
Project Installation Date	12/31/2012		
Annual kWh Reduction	685,908		
Total Project Cost	\$333,301.24		
Unadjusted Energy Efficiency Credit (EEC) Calculation	\$54,872.64		
Simple Payback (yrs)	7.6		
Utility Cost Test (UCT) for EEC	4.46		
Utility Cost Test (UCT) for Exemption	0.05		
<i>Please Choose One Option Below and Initial</i>			
Self Direct EEC: 75%	\$41,154.48	<input checked="" type="checkbox"/>	Initial: MB
EE/PDR Rider Exemption	12 Months (After PUCO Approval)	<input type="checkbox"/>	Initial:

**Note:** This is a one time selection. By selecting EEC, the customer will receive payment in the amount stated above. Selection of 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 EE/PDR rider exemption is subject to ongoing review for compliance and could be changed by the PUCO.

If EEC has been selected, will the Energy Efficiency Funds selected help you move forward with other energy efficiency projects?

☒ YES ☐ NO

**Note:** Exemptions for periods beyond 24 months are subject to look-back or true-up adjustments every year to ensure that the exemption accurately reflects the EEDR savings. Applicants must file for renewal for any exemption beyond 12 months.

#### Project Overview:

The Self Direct (Prescriptive and Custom) project that the above has completed and applied is as follows.

Redesign of RTO unit

Insulated recuperative thermal oxidizer unit with bricks, insulation material and ceramic blankets which reduced the fan energy

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: 5/19/2015

SUMMIT ETHANOL LLC

By: [Signature]

Title: General Manager

Date: 5-19-15

## Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



## STEPS FOR SUBMITTING YOUR APPLICATION

### Step 1: Verify Project, Equipment and Customer Eligibility

- ✓ Project must be a facility improvement that produces a permanent reduction in electrical energy usage (kWh).
- ✓ Facilities must be AEP electric customers that are considered "mercantile" under the definition of the Public Utilities Commission of Ohio (PUCO).
- ✓ Projects must operate at least 2,245 hours per year to qualify for cash rebates. Projects with annual energy (kWh) savings greater than the facility's annual energy (kWh) consumption are not eligible.
- ✓ All installed equipment must meet or exceed the specifications outlined in the application.
- ✓ Equipment must be installed in facilities served by AEP Ohio.
- ✓ Customer must have a valid AEP Ohio account number on an eligible AEP Ohio non-residential account.
- ✓ The Self-Direct program applies to customer facilities served by AEP Ohio's retail electric distribution rates that are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

### Step 2: Submit Application

- ✓ Complete the Checklist page.
- ✓ Agree to the Terms and Conditions and Final Payment Agreement.
- ✓ Attach the documentation listed:
  - Completed Applicant Information form
  - Completed and signed Customer Agreement form
  - Measure worksheet(s)
  - Scope of work (type, quantity, and specifications of old and new equipment)
  - Dated and itemized invoices for the purchase and installation of all equipment installed
  - Specifications for all installed equipment installed showing that it meets program specifications
- ✓ Submit the signed Final Application via email, fax or mail prior to November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the Public Utilities Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval.

### Step 3: Project Review

- ✓ The program team will review your application. The review of some projects will require an inspection; the team will contact applicants requiring an inspection for scheduling.
- ✓ After approval by AEP Ohio, the customer will receive an

Overview and Commitment form to sign and return. The project will then be submitted to the PUCO for consideration. The PUCO will assign a case number and review the project details prepared by AEP Ohio. The PUCO may request additional information, or approve or reject the energy efficiency cash rebates.

### Step 4: Receive Energy Efficiency Cash Rebates

- ✓ The program team will issue energy efficiency cash rebates four to six weeks after the PUCO approves a project.
- ✓ In lieu of a one-time energy efficiency cash rebate, 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 will be stated in this filing. For this exemption, the energy efficiency cash rebate amount (Option 1) is compared to the estimated value of the EE/PDR obligation (Option 2), as calculated by AEP Ohio. If exemption is elected, the affected account is not eligible for other programs offered by AEP Ohio during the exemption period. Unless additional energy efficiency projects are undertaken, you will, after the specified number of months exempted, again be 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 also are not eligible to elect Option 2.
- ✓ If the energy efficiency cash rebate 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 AEP Ohio programs. However, during that period of time, you are not 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 cash rebates, 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. Current year and future projects may also qualify for higher cash rebates under the prescriptive or custom programs.

### AEP Ohio Business Incentives Program

2740 Airport Drive, Suite 160

Columbus, OH 43219

Phone: (877) 607-0739

Fax: (877) 607-0740

[aepohioincentives@dhvkema.com](mailto:aepohioincentives@dhvkema.com)

Visit our website at [aepohio.com/solutions](http://aepohio.com/solutions).



*Self-Direct  
Program Application*

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



## CHECKLIST

### FINAL APPLICATION

#### Required Attachments

- ☐ Completed and signed Applicant Information form
- ☐ Completed Final Payment Agreement form  
including Energy Efficiency Cash Rebates  
Requested section
- ☐ Itemized invoices
- ☐ Equipment specifications
- ☐ Scope of work
- ☐ W-9 (required for LLC, individual, partnership,  
property management companies)

#### Cash Rebate Worksheets<sup>1</sup>

- ☐ Lighting
- ☐ HVAC
- ☐ Motors & Drives
- ☐ Compressed Air
- ☐ Refrigeration/Food Service
- ☐ Agriculture & Miscellaneous
- ☐ Transformers
- ☐ UPS
- ☐ Custom
- ☐ New Construction Lighting

Application date \_\_\_\_\_

Estimated incremental  
project cost \_\_\_\_\_

Expected completion date \_\_\_\_\_

<sup>1</sup>Incomplete applications will delay processing and receipt of energy  
efficiency cash rebates.

### Revised Submittal

Please complete below if this is a revised submittal.

Submittal date \_\_\_\_\_ AEP Project Number (if known) AEP - 1 \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_

### AEP Ohio Business Incentives Program

2740 Airport Drive, Suite 160

Columbus, OH 43219

Phone: (877) 607-0739

Fax: (877) 607-0740

[aepohioincentives@dnvkema.com](mailto:aepohioincentives@dnvkema.com)

Visit our website at [aepohio.com/solutions](http://aepohio.com/solutions).



## Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



## TERMS AND CONDITIONS

AEP Ohio offers prescriptive and custom cash rebates under the AEP Ohio Business Incentives Program to recognize the implementation of past cost-effective energy efficiency improvements for non-residential customers. AEP Ohio provides energy efficiency cash rebates (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. EEC will only be provided in the form of a check or an Energy Efficiency/Peak Demand Reduction (EE/PDR) rider exemption under this program.

Please note that funds are limited and subject to availability.

### Program Effective Dates

AEP Ohio Business Incentives Program offers cash rebates until approved funds are exhausted or November 14, 2014, whichever comes first. The effective dates of the current AEP Ohio Business Incentives Program and application submittal requirements are as follows:

- Self-direct projects are projects completed since January 1, 2011. Self-direct projects are eligible to apply for EEC with this application. Current or future projects should apply using a prescriptive or custom application.
- All 2014 AEP Ohio Business Incentives Program applications should be received no later than November 14, 2014. Any applications received after the deadline may not be submitted to the Public Utility Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval. AEP Ohio reserves the right to extend or shorten this timeline.

### Program and Project Eligibility

The AEP Ohio Business Incentives Program offers both prescriptive cash rebates for some of the more-common energy efficiency measures and custom cash rebates for other eligible improvements not included on the list of prescriptive measures. Cash rebates available under the AEP Ohio Business Incentives Program include non-residential accounts served on AEP Ohio's regulated retail rates.

Qualifying projects must be installed in a facility in AEP Ohio's electric service territory in Ohio. Cash rebates are available to all non-residential accounts that pay into the EE/PDR rider and receive their electricity over AEP Ohio wires, regardless from which retail electric supplier the customer has chosen to purchase power. A customer may neither apply for nor receive cash rebates for the same measure, equipment or service from more than one electric distribution utility.

The Self-Direct program applies only to customer facilities served by AEP Ohio's retail electric distribution rates, which are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

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

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 cash rebate. The project simple payback for custom projects prior to the cash rebate payment generally should fall between 1 to 7 years, or pass cost-effectiveness test(s) determined by AEP Ohio to qualify for a cash rebate. Incentives are based on energy savings during the first 12 months following installation.

Projects involving measures covered by the prescriptive cash rebate portion of the program are not eligible for a custom cash rebate. However, the applicant has the option to apply for a custom cash rebate for whole building integrated projects or systems, even if they include prescriptive measures. Prescriptive elements of a whole building integrated project may be paid at the deemed savings and/or cash rebate level.

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

- Projects must involve a new facility improvement with capital improvements that results in a permanent reduction in electrical energy usage (kWh). Existing/old lighting equipment must be functional and in operation at the time of replacement.
- Any measures installed at a facility must produce verifiable and persistent energy reduction and 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 measure, 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 measure, the customer may be required to return a prorated amount of cash rebate funds to AEP Ohio.
- All equipment must be new. In rare circumstances, AEP Ohio reserves the right to allow used or rebuilt equipment if the customer can prove the existing equipment cannot be replaced with new equipment.
- All installed equipment must exceed state, federal and local codes and requirements.
- Equipment must be purchased, installed and operating (or capable of operating in the case of seasonal uses) prior to

## Self-Direct Program Application

ENERGY IS PRECIOUS LET'S NOT WASTE IT.



## TERMS AND CONDITIONS

- submitting an application for a cash rebate.
- AEP Ohio will issue cash rebate payments in the form of checks or an energy efficiency Peak Demand Reduction Rider Exemption.
- The cash rebate is 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 single project receives more than one cash rebate or incentive.

Confidential information contained in any documents associated with this application will be protected from public filings. However, this information will be disclosed to the PUCO and AEP's independent evaluators for further review and approval. Customers who require a non-disclosure agreement ("NDA") will be required to permit disclosure of certain information to support the submission of their application to the PUCO to be eligible to participate.

Projects that are NOT eligible for a cash rebate 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 (Please visit [aepohio.com/solutions](http://aepohio.com/solutions) for Retro-Commissioning Program or Continuous Improvement Program)
- 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 only peak-shifting without kWh savings
- Renewables (Please visit [aepohio.com/save](http://aepohio.com/save) for Renewables Program)
- Projects required by state or federal law, building or other codes, or projects that are standard industry practice
- Projects easily reverted/removed
- Projects installed entirely for reasons other than improving energy efficiency
- Other conditions as may be determined by AEP Ohio

### Energy Efficiency Cash Rebate Limits

For both prescriptive and custom measures in this application, the **total EEC shall be 75% of the lesser of:** 1) The calculated cash rebate as approved by AEP Ohio or 2) 50% of incremental project cost (not including internal labor). In calculating the savings and EEC for custom measures, please contact the AEP Ohio Business Incentives Program office to determine an appropriate baseline for savings. In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed in the chart.

### PROGRAM ENERGY EFFICIENCY CASH REBATES

Energy efficiency cash rebate levels for one-year energy savings	See tables for prescriptive cash rebates. Custom cash rebates: \$0.08/ kWh x 75%.
Minimum/maximum simple payback before energy efficiency cash rebate applied	Must pass cost effectiveness test(s) determined by AEP Ohio; generally between one and seven years
Maximum payout	75% of 50% of the incremental project cost, excluding internal labor (additional caps and tiering may also apply)
Energy efficiency cash rebate levels for projects completed since 1/1/2011	Calculated amount on the prescriptive or custom worksheets attached and subject to funding limits
Cash rebate limit	See Cash Rebate Limits and Tiering section
Cash rebate calculation order	Measure cash rebate caps are applied first. Project-cost cash rebate limits are applied second. Cash rebate tiering is applied third. Lastly, 75% factor is applied to cash rebate.

### Energy Efficiency Cash Rebate Tiering

The total cash rebate paid for any self-direct application cannot exceed 50% of the incremental project cost (not including internal labor). In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed below:

- Tier 1 \$0 - \$100,000 = 100% of eligible calculated cash rebate value
- Tier 2 \$100,001 - \$300,000 = 50% of eligible calculated cash rebate value
- Tier 3 \$300,001 - \$500,000 = 25% of eligible calculated cash rebate value
- Tier 4 \$500,001 - beyond = 10% of eligible calculated cash rebate value

### Application Review Process

Applications are not a guarantee of program acceptance and energy efficiency cash rebates. 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 completed application and determines that the project meets the program eligibility requirements. Upon review of the application, the program will notify applicants who submit incomplete applications of deficiencies; applicants may lose their place in the review process until receipt of all requested information. Applications must be completed and all information received by the deadlines defined above to begin processing. Applicants are encouraged to call the program hotline with any questions about documentation requirements.



## Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



## TERMS AND CONDITIONS

### Application

Projects completed on or after January 1, 2011, must submit an application and all required supporting documentation by November 14, 2014, to be applicable for the 2014 program year. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval.

A signed application with supporting project documentation verifying project installation and capital improvements must be submitted to AEP Ohio prior to application approval. Project documentation, such as (but not limited to) copies of dated invoices for the purchase and installation of the measures, equipment specification sheets, energy-savings analysis, complete application and W-9 forms (LLC, individual, partnership, property management companies), is required. The invoice should be itemized sufficiently to separate the project cost from the costs of other services not related to the energy efficiency project and other repairs. The location or business name on the invoice must be consistent with the application information. Requested information such as proof of project completion could include equipment purchase dates, installation dates, proof that the equipment was operational, manufacturer specifications, warranty information, invoices and proof of owner co-payment.

### Inspections

The AEP Ohio Business Incentives Program 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 or monitoring data analysis. Customers are required to allow access to project documents and the facility where the measures were installed for a period of five years after receipt of cash rebate payment by AEP Ohio. In the event a building(s) is turned over to a new account holder/owner before AEP Ohio officially measures and verifies incentivized equipment, AEP Ohio reserves the right to do so under new ownership. Customer understands and agrees that program installations may also be subject to inspections by the PUCO, its designee or AEP's independent evaluators, 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 may estimate the annual electricity usage of both the existing and proposed equipment 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 equipment is replaced prior to the end of its rated service life in order to achieve energy savings,

the existing equipment performance may be used as the baseline in the energy-savings calculations. Documentation of early replacement decision and/or actual equipment energy usage will be required. If equipment is replaced due to failure or for other reasons (such as obsolescence or a need for more capacity), the baseline performance used in the savings calculation must be either the minimum performance that would be required by code in effect for that equipment type at the time of installation and application (where a code applies) or industry standard when a code does not apply.

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 in effect at the time of installation or industry standard, if no code exists.

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 sources for these assumptions. If no savings analysis is provided by the customer/contractors, AEP Ohio reserves the right to utilize its approved methodology and analysis to determine energy savings.

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 and peak-demand reduction used in calculating the cash rebate amount. AEP Ohio also reserves the right to require specific measurement and verification activities, including monitoring the retrofit to determining the cash rebate. Verification of the pre-existing consumption may also be required.

For custom projects, the applicant is required to provide information in order to allow AEP Ohio to verify the baseline usage of the pre-existing equipment in order to use the existing equipment as the baseline. AEP Ohio may need to conduct inspections of projects to verify equipment and operating conditions.

Customers are encouraged to contact the hotline to speak with program staff prior to submitting projects that warrant special treatment. These non-typical projects will be considered on a case-by-case basis by AEP Ohio.

### Tax Liability

Cash rebates 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 your business as a result of your receipt of cash rebate. A W-9 for LLC, individual, partnership and property management companies must be provided with all applications.

## Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



## TERMS AND CONDITIONS

### Disclaimer

Any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

Peak-demand reduction is defined as the reduction in average load over the performance hours as a result of replacing existing electrical equipment with more-efficient electrical equipment. Peak performance hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 3:00 p.m. and 6:00 p.m. Eastern Standard Time. PJM Peak Hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 2:00 p.m. and 6:00 p.m. Eastern Standard Time.

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

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## APPLICANT INFORMATION

**Important:** Please read the Terms and Conditions before signing and submitting this application. Complete all information and provide required documentation to avoid processing delays.

### Project Information

**Building Type** (click here for Building Type definitions)

(Select One)

**W-9 Tax Status**

(Select One)

**How Did You Hear About the Program?**

(Select One)

**Shift**

(Select One)

**Affected Area Square Footage**

**Dodge Report Number** (if applicable)

**Building Operating Hours**

**Equipment Operating Hours**

**Does the Facility Have a Data Center?**

(Select One)

Name of Applicant's Business \_\_\_\_\_

Project Name (if applicable) \_\_\_\_\_ Name as It Appears on Utility Bill \_\_\_\_\_

AEP Ohio Account Number Where Measure Installed \_\_\_\_\_ Taxpayer ID (SSN/FEIN) \_\_\_\_\_

Mailing Address \_\_\_\_\_ City \_\_\_\_\_ State <sup>OH</sup> Zip \_\_\_\_\_

☐ Check if mailing address and installation address are the same.

Installation Address \_\_\_\_\_ City \_\_\_\_\_ State <sup>OH</sup> Zip \_\_\_\_\_

### Customer Contact

Please provide all contacts we may need to process this project. List the project decision-maker, the technical contact, etc. as the contractor contact.

Name of Contact(s) (preferred contact for documentation) \_\_\_\_\_

Title of Contact \_\_\_\_\_ Phone # \_\_\_\_\_ Ext. \_\_\_\_\_

Contact Fax # \_\_\_\_\_ Contact Email \_\_\_\_\_

### Solution Provider/Contractor Information<sup>1</sup>

Name of Contracting Company \_\_\_\_\_

Name of Contact Person \_\_\_\_\_ Title of Contact \_\_\_\_\_

Mailing Address \_\_\_\_\_ City \_\_\_\_\_ State <sup>OH</sup> Zip \_\_\_\_\_

Phone # \_\_\_\_\_ Ext. \_\_\_\_\_ Contact Fax # \_\_\_\_\_ Contact Email \_\_\_\_\_

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

<sup>1</sup>Solution provider/contractor is the party involved in the application submittal (i.e., specs, scope of work, etc.).



## Self-Direct Program Application

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## FINAL PAYMENT AGREEMENT

### Final Payment Agreement

I understand that the application and all required documentation should be received by the AEP Ohio Business Incentives Program by November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval of any cash rebate by the PUCO. All equipment must be purchased, installed and fully operational prior to submitting the application.

I understand that AEP Ohio or its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of cash rebate levels for this project.

I understand that this project must involve a facility improvement that results in improved energy efficiency.

As an eligible AEP Ohio account holder, I certify that decisions to acquire and install the indicated energy efficiency measures, which will be demonstrated with supporting documentation required by AEP Ohio, were made after January 1, 2011, and that work was completed on this project on or after January 1, 2011. The energy efficiency measures are for use in my business facility and not for resale.

I understand that the location and business name on the project documentation must be consistent with the application information. Project documentation, measure specification sheets and details of measure installation are included. Documentation indicating contract dates prior to January 1, 2011, may render this application ineligible. I understand that all submissions become the property of AEP Ohio. It is recommended to keep a copy of the application for your records.

I agree that if: (1) I did not install the related measure(s) identified in my application or (2) I remove the related measure(s) identified in my application before a period of five (5) years or the end of the measure life, whichever is less, I shall refund a prorated amount of energy efficiency cash rebates to AEP Ohio based on the actual period of time the related measure(s) were installed and operating. This is necessary to assure that the project's related energy benefits will be achieved. (3) AEP Ohio will pay 75% of the lesser of: 1) The calculated cash rebate 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 its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of energy efficiency cash rebate levels for this project.

I agree to be responsible to comply with any applicable codes or ordinances. 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. I understand it is my responsibility to be aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at [epa.gov/epawaste/hazard/index.htm](http://epa.gov/epawaste/hazard/index.htm).

I agree to verification by the utility or its representatives of both sales transactions and equipment installation. I understand that these cash rebates are available to all non-residential accounts that pay into the Energy Efficiency and Demand Response (EE/PDR) rider and receive their electricity over AEP Ohio wires, regardless from which retail electric distribution supplier the customer has chosen to purchase power.

I understand that 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 cash rebates promised to customers as a result of misrepresentation of the program.

I understand that AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measure eligible for energy efficiency cash rebates under this program. Furthermore, 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 cash rebates will be based upon the Final Application and program terms and conditions, as well as the availability of funds.

I understand that the program has a limited budget. Applications will be processed until allocated funds are reserved or spent. Final Applications should be received by November 14, 2014, to be eligible for funding under the current program period.

I certify that the information on this application is true and correct, and that the taxpayer ID number, tax status and W-9 are the applicant's. I understand that cash rebates exceeding \$600 will be reported to the IRS, unless the payee is exempt. I understand that cash rebates assume related energy benefits over a period of five (5) years or for the life of the measure, whichever is less.

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

*Self-Direct  
Program Application*

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## FINAL PAYMENT AGREEMENT

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

I understand that any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

## Self-Direct Program Application

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### CUSTOMER AGREEMENT

- ☐ I have read and understand the program requirements, measure specifications, and [Terms and Conditions](#) and [Final Application Agreement](#) and agree to abide by those requirements. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program. For final applications, sign and submit only after all equipment is installed and operational. A customer signature is required for payment. Signed applications received by email or fax will be treated the same as original applications received by mail.
- ☐ As an eligible customer, I verify the information is correct and request consideration for participation under this program.

#### Digital Signature Instructions

1. Click in the signature box.
2. Follow the digital signature directions displayed in the "Add Digital ID" pop-up box.
3. Establish a digital ID and password.
4. In the "Sign Document" pop-up box, you can select to change the signature appearance from typed font to an imported graphic.
5. Follow directions to save signed application; signature and verification information will appear in the signature box.

Total Incremental Project Cost

Total Cash Rebates Requested

Customer Signature (AEP Ohio Customer)

Print Name

Date

07/27/15

Project Completion Date

SUBMIT VIA EMAIL

PRINT APPLICATION




## AEP-14-14451-POET Biorefining Leipsic

This project consists of improving the RTO (recuperative thermal oxidizer) unit within the plant. Motor and VFD of the RTO is not altered in any way. Improvements on the unit allowed the blower to run in lower speed which is reducing the energy use.

Amperage metering from Leipsic wasn't available. Only the fan speed was metered in the past at this plant. Amperage metering is provided from Marion plant. It is used to create a power curve based on the fan speed. Marion plant has identical RTO unit and process which allows the data to be used in the calculations for Leipsic plant.

Since there is no alteration to the motor-VFD system, there is only one power curve which is the motor power vs fan speed. Savings are calculated from this curve based on the fan speed before and after the improvements.

 <b>- DATA SHEET -</b>		<b>GE Industrial Systems</b> <b>Custom 8000 (R)</b> <b>SQUIRREL CAGE MOTOR</b>	
CUSTOMER		TAG: B-854-MTR	
CUSTOMER ORDER			
GE MODEL	: 5KAF82111386501	DESIGN	: KK216P345A
SO	: 2821484	RI	: 132-0-9372/01
QTY	: 1	SERIAL #	: 282004063
POWER	: 800 HP	TYPE	: KAF
POLES	: 06	FRAME	: 8211S
VOLTAGE	: 4160 V (4160 V max)	ENCLOSURE	: WPI
FREQUENCY	: 60 Hz	SERVICE FACTOR	: 1.15 (SINE WAVE)
PHASES	: 03	SERVICE FACTOR	: 1.00 (ASD)
TEMPERATURE RISE	: 100°C / RTD @ SF	INSULATION CLASS	: F (POLYSEAL)
		TEMPERATURE CLASS	: F
DRIVEN LOAD	: FAN	MAX. ALTITUDE	: 3300 ft
LOAD WK2 REF.TO MOTOR SHAFT	: 7757 Lbft²	AMB. TEMP. (MIN/MAX)	: -18/40 °C
<b>Calculated Performance</b>			
RATED RPM	: 1185	RPM TOP	: 1200
RATED CURRENT	: 105 A	COUPLING TYPE	: FLEXIBLE
RATED TORQUE	: 3539 Lbft	ARRANGEMENT	: F1
RATED KVA	: 757		
STATOR CONNECTION	: Y		
MIN. STG .VOLTAGE	: 90% V		
TIME RATING	: CONTINUOUS		
		ROTATION	: DUAL
TOTAL WEIGHT (calculated)	: 5100 Lb	MAX. BRG.VIBR. [pk]	: 0.12 in/s
ROTOR WK2 (calculated)	: 357 Lbft²	BEARING TYPE	: ANTI-FRICTION
NOISE LEVEL(dBA)	: 85 @ 3.3 ft	BEARING LUBRICATION	: GREASE
STATOR RESIST. @ 25C	: 0.3316 Ohms L-L	EFF.( %)	: 95.2 (SINE WAVE)
X / R RATIO	: 13.225	P.F. (pu)	: 0.820 (SINE WAVE)
OPEN CIRC. CONSTANT	: 0.5907 s	PREMIUM	
OUTLINE NUMBER	: M82C101366		
INSTRUCTION BOOK	: GEEP-124I		
		STATOR / ROTOR (SLOTS)	: 72 / 86
<b>NOTES (SEE ATTACHMENT)</b> VIBRATION LIMITS BASED ON MOTOR RUNNING UNCOUPLED AND WITH BEARING TEMPERATURE STABILIZED IN STIFF BASE. PREMIUM EFFICIENCY MOTOR MECHANICALLY INTERCHANGEABLE WITH THE EXISTING MODEL 5KAF82111386201			
PREPARED BY : CARLOS NORONHA		SH 1 OF 3	
APPROVED :		DS2821484	
06-30-2003		REV : 00	



**- DATA SHEET -**

**GE Industrial Systems  
Custom 8000 (R)  
SQUIRREL CAGE MOTOR**

MODEL : 5KAF82111386501

SO : 2821484

RI : 132-0-9372/01

**Operation**

SUITABLE FOR OPERATION FROM 600 TO 1200 RPM AT VARIABLE TORQUE  
CONSTANT VOLTS/HERTZ TO 1200 RPM

**ACCESSORIES**

- 6 STATOR RTD'S - PT 100 OHMS AT 0 C  
Alarm = 150 °C Trip = 155 °C
- 2 BEARING RTD'S - PT 100 OHMS AT 0 C  
Alarm = 80 °C Trip = 90 °C  
HEATER - 800W - 120V 1PH

**TESTS**

WINDING RESISTANCE  
INSULATION RESISTANCE TO GRD  
HIGH POTENTIAL TEST  
NO LOAD TEST  
MECHANICAL BALANCE

**NOTES**

**REVISIONS**

PREPARED BY : CARLOS NORONHA  
APPROVED :

06-30-2003 REV : 00

SH 2 OF 3

DS2821484



- DATA SHEET -

GE Industrial Systems  
Custom 8000 (R)  
SQUIRREL CAGE MOTOR

MODEL : 5KAF82111386501

SO : 2821484

RI : 132-0-9372/01

INDUCTION MOTOR DATA  
FOR  
ADJUSTABLE FREQUENCY DRIVE

INDUCTION MOTOR RATING

FRAME	8211	POLE	6	HP	800.	RPM	1200.00	EL	4160.00
PH	3	CYC	60.0	TEMP	100.	IL	106.0	SF	1.00
CONN	Y								

SUITABLE FOR OPERATION FROM 600.-1200. RPM AT VARIABLE TORQUE

CONSTANT VOLTS/HERTZ TO 1200.00 RPM

CALCULATED OPERATING DATA (@ 800. HP, 60.0 HZ)

HP	800.	RPM	1200.	PH	3	R-TQ	3536.	%VNL	VNL	INL
FLA	106.0	TEMP	140.	XST	3.164	M-TQ	8254.	120	4992.	84.0
FLS	1187.7	R1	0.2270	X0	4.579	I-MT	381.	110	4576.	60.9
E-LN	4160.	R2	0.2532	X1	2.542	C-MT	9711.	100	4160.	44.3
E-PH	2401.8	IM(NL)	44.3	X2	2.037			90	3744.	33.4
FREQ	60.0	XM	54.343	SLIP	0.0103			80	3328.	26.8
								70	2912.	22.1
EFF	0.9547							60	2496.	18.5
PF	0.8210							50	2080.	15.4
WK2M	357.4									

HARMONIC ANALYSIS

6-STEP SQUARE WAVE

MAXIMUM VOLTAGE	4160.0
TOTAL HARMONIC LOSSES	7.356
TEMPERATURE RISE (By RTD)	76.2

PREPARED BY :  
APPROVED :

CARLOS NORONHA

06-30-2003

REV : 00

SH 3 OF 3

DS2821484

## General Specifications

Technical Specifications	
Item	Description
Applicable Standards	CUL, UL 347A, NEMA ICS 6, NEMA ICS 7
Power System Input	Voltage: 4160Vac, 3-phase (other inputs available) Frequency: 60 Hz (50 Hz available) Lightning arrestors included as standard Top or bottom cable entry
Transformer	Copper winding is standard Electrostatic shield is standard 115°C rise Insulation class: 220°C Cooling: forced air Optional fan / control power winding
Converter Type	AC fed 24-pulse diode, non-regenerative
Input Power Data	Less than or equal 3% THD (current distortion) Meets IEEE 519-1992 standards without filters Displacement power factor (PF): 0.95 lag True PF: greater than 0.95 lag from 10% to 100% load 100 msec Control Power Line Dip/Ride Through
Inverter	Multi-level NPC (Neutral-Point-Clamped) configuration 3300 V IGBTs for margin, minimum parts count Optically isolated control for safety Roll-out phase modules for fast maintenance and repair Inverter utilizes heat pipe technology for long IGBT life, compact size, and low noise Firing Frequency: 2048 Hz
Control	Non-volatile memory for parameters Vector control with or without speed feedback Critical Speed Avoidance Independent Accel / Decel ramp rates. Unidirectional Flying Restarts
Vector Control Accuracy and Response	Speed regulator: 20 rad/s ± 0.01% speed regulation with speed sensor, ± 0.5% without Torque response: 500 rad/s Torque accuracy: ± 4% with temp sensor, ± 30% without
Output	3% or less motor current harmonic distortion Multi-level output for motor-friendly waveform Optional integrally mounted output dv/dt filter Top or bottom cable entry Duty: 100% Rated Continuous, 115% Rated 60 Seconds.



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

**Commission of Ohio Docketing Information System on**

**7/27/2015 11:36:17 AM**

**in**

**Case No(s). 15-1178-EL-EEC**

Summary: Application Summit Ethanol LLC and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer electronically filed by Mr. Matthew J Satterwhite on behalf of Ohio Power Company