



**Public Utilities  
Commission**

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

Case No.: 13-0533 -EL-EEC

Mercantile Customer: Port Clinton City School District

Electric Utility: Ohio Edison Company

Program Title or Description: Bataan Elementary addition/renovation and New Middle School

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.

## Section 1: Mercantile Customer Information

Name: Port Clinton City School District

Principal address: 431 Portage Drive Port Clinton, Ohio 43452

Address of facility for which this energy efficiency program applies: 807 S. Jefferson St. & 525 W. 6<sup>th</sup> Street Port Clinton Ohio 43452

Name and telephone number for responses to questions: Neil Wittberg : 614.949.5616

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

- The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

## Section 2: Application Information

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

- Individually, without electric utility participation.
- Jointly with the electric utility.

B) The electric utility is: Ohio Edison Company

C) The customer is offering to commit (check any that apply):

- Energy savings from the customer's 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 capacity savings 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 (check those that apply):

- Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced 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)). **If Checked, Please see Exhibit 1 and Exhibit 2**
- 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):  
  
SEE EXHIBIT 2.
- Behavioral or operational improvement.

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

- 1) If you checked the box indicating that the 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:

Annual savings: \_\_\_\_\_ kWh

- 2) If you checked the box indicating that the customer 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 any less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 3) If you checked the box indicating that the 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: 489,037 kWh

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 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):
  - 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?

\_\_\_\_\_

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

\_\_\_\_\_ kW

**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 energy efficiency 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 \$31,200. (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.)

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 the customer's ongoing efficiency program. (Attach documentation that establishes the ongoing nature of the program.) In order to continue the exemption beyond the initial 24 month period, the customer 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: See Exhibit 3 (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 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 **See Exhibit 3**

The utility's program costs were **See Exhibit 3**

The utility's incentive costs/rebate costs were **See Exhibit 3**

### **Section 7: Additional Information**

Please attach the following supporting documentation to this application:

- Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.
- A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:
  - 1) any confidentiality requirements associated with the agreement;
  - 2) a description of any consequences of noncompliance with the terms of the commitment;
  - 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
  - 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,
  - 5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.
- 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.



**Public Utilities  
Commission**

**Application to Commit  
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Case No.: 13-0533 -EL-EEC

State of Ohio :

Jeff Dornbusch, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

Port Clinton City School District

[insert customer or EDU company name and any applicable name(s) doing business as]

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 of Affiant & Title

Sworn and subscribed before me this 2 day of November, 2013 Month/Year

  
Signature of official administering oath

Jeff Dornbusch - Treasurer  
Print Name and Title

My commission expires on 8-31-2014

**BETH A. SANDWISCH**  
Notary Public, State of Ohio  
My Commission Expires 8-31-14



Customer Legal Entity Name: Port Clinton City School District

Site Address: Port Clinton Middle School

Principal Address: 807 S. Jefferson St.

Project No.	Project Name	Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:	Description of methodologies, protocols and practices used in measuring and verifying project results	What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date.	Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.
1	Lighting Control Sensors	Installed daylight and occupancy sensors to shut the lights off when no motion or sunlight is detected.	The energy savings and rebate amount inputted into Exhibit 2A are taken from the FE Lighting Rebate Calculator (OE.PortClinton.MS.Lighting Project Cash Rebate Form). The number of sensors and watts controlled can be found in the Middle School building lighting countsheet, (OE.PortClinton.MS.Countsheet_ATTACHMENT.C.xlsx).	N/A	N/A
2	Variable Frequency Drives	Variable frequency drives were installed on multiple supply fans, return fans, and pumps throughout the new facility.	Data was gathered from the mechanical schedules (OE.PortClinton.MS.MechSchedule.AttachmentH.pdf) and input to the motors and drives rebate calculator to determine the cash rebate amount. kWh savings were calculated based on approximate runtimes for the different motor applications (see: attachment F: OE.PortClinton_MS.VFD.Calcs_ATTACHMENT.F.xlsx)	N/A	N/A
3	Energy Efficient Chillers	2 new york air cooled chillers were installed as part of the facility renovation.	Data was gathered from the chiller specifications (OE.PortClinton.ChillerSpecs.AttachmentI.pdf) input to the savings calculator (OE.PCCS.MiddleSchool.Chiller.Calc.AttachmentJ.xlsx) to determine the kWh savings which was then input to the custom rebate calculator to determine the cash rebate amount.	N/A	N/A



**Commitment  
Payment  
\$**



**\$0**

**Exhibit 3 Utility Cost Test**

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost \$/MWh (B)	Utility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	96	\$ 308	\$ 29,538	\$ 1,350	\$4,477	\$958	\$ 6,785	<b>4.4</b>
2	68	\$ 308	\$ 20,859	\$ 1,350	\$6,169	\$677	\$ 8,195	<b>2.55</b>
3	59	\$ 308	\$ 18,324	\$ 1,350	\$3,566	\$594	\$ 5,511	<b>3.33</b>
<b>Total</b>	<b>223</b>	<b>\$ 308</b>	<b>68,721</b>	<b>4,050</b>	<b>\$14,212</b>	<b>\$2,229</b>	<b>20,491</b>	<b>3.4</b>

**Notes**

- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration’s 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better representation of the energy price that Ohio customers would see, a Cinergy Hub equivalent price was derived by applying a ratio based on three years of historic national average and Cinergy Hub prices. This value is consistent with avoided cost assumptions used in EE&PDR Program Portfolio and Initial Benchmark Report, filed Dec 15, 2009 (See Section 8.1, paragraph a).
- (C) = (A) \* (B)
- (D) Represents the utility's costs incurred for self-directed mercantile applications for applications filed and applications in progress. Includes incremental costs of legal fees, fixed administrative expenses, etc.
- (E) This is the amount of the cash rebate paid to the customer for this project.
- (F) Based on approximate Administrator’s variable compensation for purposes of calculating the UCT, actual compensation may be less.
- (G) = (D) + (E) + (F)
- (H) =(C) / (G)

**Port Clinton City School District ~ Port Clinton Middle School**  
**Docket No. 13-0533**

**Site:** 807 S. Jefferson St.





## Project Estimated Annual Savings Summary

Estimated Annual kWh Savings	95,815
Total Change in Connected Load	-2.41

Annual Estimated Cost Savings	\$9,581.50
Annual Operating Hours	2,080

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	-\$280.95
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$0.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/sensor (includes all Lighting Controls, both interior and exterior)	\$6,250.00

Total Calculated Incentive	\$5,969.05
----------------------------	------------

Total Fixture Quantity excluding retrofit CFLs and LED Exit Sign	1
Total Lamp Quantity for retrofit Screw-In CFLs	0
Total Lamp Quantity for retrofit Hard-Wired CFLs	0
Total Fixture Quantity for retrofit LED Exit Signs	0
Total Quantity for Occupancy Sensors	0
Total Quantity for Daylight Sensors	250

Please briefly describe how you estimated your coincidence factor (CF) and applicant equivalent full-load hours (EFLH) for facility type "Other" indicated on the Lighting Form tab

Demand Savings (For Internal Use Only)

-1.84



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Project Name:	
Site Name:	
Completed by (Name):	
Date completed:	

**Motor Rebate Calculation Form**

Motor ID, Location, and Operation Data				Old Motor Nameplate Data								New Motor Nameplate Data								Total Motor Incentive <sup>1</sup> \$		
Unique Motor ID(s)	Number of Identical Units	Motor Location	Annual Hours of Op <sup>2</sup>	Loading (Constant, or if variable, indicate control type)	Load Factor (LF) <sup>3</sup>	Enclosure type: TEFC or ODP	Mfr.	Model Number	Motor HP	Nominal Efficiency	Speed (RPM)	Loading (Constant, or if variable, indicate control type)	Load Factor (LF) <sup>3</sup>	Enclosure type: TEFC or ODP	Mfr.	Model Number	Motor HP	Nominal Efficiency	Speed (RPM)			
<b>Incentive (through 10/11/2011)</b>																				<b>\$0</b>		

Motor IDs may be specified by HVAC application type and number. Application types eligible for this incentive include:

- Chilled Water Pump (CHWP),
- Heating Hot Water Pump (HHWP),
- HVAC Fans (HVACF),
- Cooling Tower Fan (CTF), and
- Condensing Water Pump (CWP).

If the HVAC application is not listed above, please describe the application on a separate sheet and include it with your application package.

- (1) Motor incentives are listed in Table 2 - Incentive levels per motor located on Motor Incentive Table tab
- (2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.
- (3) For all motor applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.



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Table 1 - Minimum Motor Efficiency Requirements (NEMA Premium® Efficiencies)

Open Drip Proof (ODP)				Totally Enclosed Fan-Cooled (TEFC)			
Size HP	# of Poles			Size HP	# of Poles		
	6	4	2		6	4	2
	Speed (RPM)				Speed (RPM)		
	1200	1800	3600		1200	1800	3600
1	82.50%	85.50%	77.00%	1	82.50%	85.50%	77.00%
1.5	96.50%	86.50%	84.00%	1.5	87.50%	86.50%	84.00%
2	87.50%	86.50%	85.50%	2	88.50%	86.50%	85.50%
3	88.50%	89.50%	85.50%	3	89.50%	89.50%	86.50%
5	89.50%	89.50%	86.50%	5	89.50%	89.50%	88.50%
7.5	90.20%	91.00%	88.50%	7.5	91.00%	91.70%	89.50%
10	91.70%	91.70%	89.50%	10	91.00%	91.70%	90.20%
15	91.70%	93.00%	90.20%	15	91.70%	92.40%	91.00%
20	92.40%	93.00%	91.00%	20	91.70%	93.00%	91.00%
25	93.00%	93.60%	91.70%	25	93.00%	93.60%	91.70%
30	93.60%	94.10%	91.70%	30	93.00%	93.60%	91.70%
40	94.10%	94.10%	92.40%	40	94.10%	94.10%	92.40%
50	94.10%	94.50%	93.00%	50	94.10%	94.50%	93.00%
60	94.50%	95.00%	93.60%	60	94.50%	95.00%	93.60%
75	94.50%	95.00%	93.60%	75	94.50%	95.40%	93.60%
100	95.00%	95.40%	93.60%	100	95.00%	95.40%	94.10%
125	95.00%	95.40%	94.10%	125	95.00%	95.40%	95.00%
150	95.40%	95.80%	94.10%	150	95.80%	95.80%	95.00%
200	95.40%	95.80%	95.00%	200	95.80%	96.20%	95.40%

Table 2 - Incentive Levels Per Motor through 10/11/2011

Open Drip Proof (ODP)				Totally Enclosed Fan-Cooled (TEFC)			
Size HP	# of Poles			Size HP	# of Poles		
	6	4	2		6	4	2
	Speed (RPM)				Speed (RPM)		
	1200	1800	3600		1200	1800	3600
1	\$25	\$25	\$25	1	\$25	\$25	\$25
1.5	\$30	\$30	\$30	1.5	\$30	\$30	\$30
2	\$60	\$60	\$60	2	\$60	\$60	\$60
3	\$60	\$60	\$60	3	\$60	\$60	\$60
5	\$60	\$60	\$60	5	\$60	\$60	\$60
7.5	\$80	\$80	\$80	7.5	\$80	\$80	\$80
10	\$80	\$80	\$80	10	\$80	\$80	\$80
15	\$125	\$125	\$125	15	\$125	\$125	\$125
20	\$125	\$125	\$125	20	\$125	\$125	\$125
25	\$164	\$164	\$164	25	\$164	\$164	\$164
30	\$199	\$199	\$199	30	\$199	\$199	\$199
40	\$234	\$234	\$234	40	\$234	\$234	\$234
50	\$269	\$269	\$269	50	\$269	\$269	\$269
60	\$304	\$304	\$304	60	\$304	\$304	\$304
75	\$339	\$339	\$339	75	\$339	\$339	\$339
100	\$374	\$374	\$374	100	\$374	\$374	\$374
125	\$410	\$410	\$410	125	\$410	\$410	\$410
150	\$445	\$445	\$445	150	\$445	\$445	\$445
200	\$468	\$468	\$468	200	\$468	\$468	\$468



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<b>Project Name:</b>	Port Clinton City School District
<b>Site Name:</b>	New Middle School
<b>Completed by (Name):</b>	Neil
<b>Date completed:</b>	10/11/2012

### Variable Frequency Drive Rebate Form

VFD and Controlled Motor Nameplate DATA											Total Motor Incentive <sup>1</sup> \$
Motor Application	VFD Manufacturer	VFD Model Number	Unique Motor ID(s)	Motor Location	Enclosure type: TEFC or ODP	Annual Hours of Operation <sup>2</sup>	Load Factor (LF) <sup>3</sup>	Motor Model Number	Motor HP	Motor Nominal Efficiency	
Supply Fan	Yaskawa	P7	DOAS-B101	AHU	ODP	2790	0.8		20(2)	93	<b>1,400</b>
Exhaust Fan	Yaskawa	P7	DOAS-B101	AHU	ODP	2790	0.8		7.5(2)	91	<b>525</b>
Supply Fan	Yaskawa	P7	AHU-C201	AHU-C201	ODP	2790	0.8		25	93.6	<b>875</b>
Exhaust Fan	Yaskawa	P7	HRU-C202	AHU	ODP	2790	0.8		5	89.5	<b>175</b>
Supply Fan	Yaskawa	P7	HRU-C202	AHU	ODP	2790	0.8		40	94.1	<b>1,400</b>
HHWP	Yaskawa	P7	P-C201a & b	mech	ODP	5520	0.8		20 (2)	93	<b>1,400</b>
<b>Incentive through 10/11/2011 @ \$35/hp</b>											<b>5,775</b>

(1) VFD incentives (through 10/11/2011) are calculated at a flat rate of \$35 per horsepower controlled, up to a maximum of 500 hp controlled per VFD.

When a single VFD is used to control two motors in a lead/lag (standby, redundant) configuration, use only the horsepower rating of one motor to figure controlled horsepower. For instance, if a single VFD controls two 30hp motors with only one operating at a time, the incentive calculation should be based on 30 hp: 30hp x \$35/hp = \$900.

(2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.

(3) For all motor and VFD applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.



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Project Name:	Port Clinton City School District
Site Name:	New Middle School
Completed by (Name):	Neil
Date completed:	10/11/2012

### Variable Frequency Drive Rebate Form

VFD and Controlled Motor Nameplate DATA											Total Motor Incentive <sup>1</sup> \$
Motor Application	VFD Manufacturer	VFD Model Number	Unique Motor ID(s)	Motor Location	Enclosure type: TEFC or ODP	Annual Hours of Operation <sup>2</sup>	Load Factor (LF) <sup>3</sup>	Motor Model Number	Motor HP	Motor Nominal Efficiency	
CHWP	Yaskawa	P7	P-C202a & b	mech	ODP	5520	0.8		20(2)	93	<b>1,400</b>
CHWP	Yaskawa	P7	P-c203a & b	mech	ODP	5520	0.8		15(2)	93	<b>1,050</b>
<b>Incentive through 10/11/2011 @ \$35/hp</b>											<b>2,450</b>

(1) VFD incentives (through 10/11/2011) are calculated at a flat rate of \$35 per horsepower controlled, up to a maximum of 500 hp controlled per VFD. When a single VFD is used to control two motors in a lead/lag (standby, redundant) configuration, use only the horsepower rating of one motor to figure controlled horsepower. For instance, if a single VFD controls two 30hp motors with only one operating at a time, the incentive calculation should be based on 30 hp: 30hp x \$35/hp = \$900.

(2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.

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**Port Clinton City Schools**  
**New Middle School**

ATTACHMENT J

**Energy Efficient Chiller Calculation**

Make	Model	Quantity	IPLV	Runtime	Tons	Load Factor
York	YLAA0115SE	2	14.6	2246	113.9	0.35

ASHRAE 2007 Baseline IPLV
10.4

Savings (kWh)
59,440

Binned Weather Data : Toledo Ohio  
 725360TY (1).bin

StrTemp	EndTemp	T(F)	Twb(F)	h(Btu/lba)	w(lbw/lba)	hrs1-8	hrs9-16	hrs17-24	hrs1-24
105	109	107	-99	-99	-99	0	0	0	0
100	104	102	-99	-99	-99	0	0	0	0
95	99	97	-99	-99	-99	0	0	0	0
90	94	91.3	74.8	38.3	0.0148	0	11	5	16
85	89	87.7	72.4	36.2	0.0138	0	57	23	80
80	84	82.1	68.8	33.3	0.0124	0	229	93	322
75	79	76.7	66	31.2	0.0117	23	289	178	490
70	74	72.5	63.8	29.6	0.0112	80	246	211	537
65	69	67.9	61.9	28.2	0.0109	268	260	273	801
60	64	62.6	57	24.9	0.0091	336	243	293	872
55	59	57.2	51.9	21.7	0.0073	264	172	246	682
50	54	52.1	47.5	19.1	0.0061	260	192	206	658
45	49	47.4	43.5	16.8	0.005	225	133	167	525
40	44	43	39.6	14.8	0.0041	199	199	197	595
35	39	37.4	35.8	12.7	0.0035	329	248	311	888
30	34	32.1	31.6	10.6	0.0027	269	182	180	631
25	29	27.6	28.2	9	0.0022	203	146	167	516
20	24	23.1	24.9	7.4	0.0017	150	100	147	397
15	19	17.4	20.9	5.6	0.0013	117	110	78	305
10	14	12	17.4	4	0.001	70	58	76	204
5	9	7.4	14.4	2.7	0.0008	56	20	42	118
0	4	2.6	11.3	1.3	0.0006	35	19	14	68
-5	-1	-1.7	8.5	0.1	0.0005	25	6	13	44
-10	-6	-7.1	5.1	-1.3	0.0004	11	0	0	11

Client: Port Clinton
Site: Middle School ATTACHMENT C
Prepared By: Trace Searles
Date Last Worked On: 9/19/2012



Room By Room COMcheck Summary				
Area (sq ft)	Allowed Wattage	Proposed Wattage	% Above/Below Code	Watts Saved
66184	84671.4	87083	✘ -2.85%	-2411.6
Hours of Operation	Electric Rate	kWh Saved	\$ Saved	
0	0	0	0	

Whole Building COMcheck Summary				
Building Type	COMcheck Rating			
School	1.2			
Area	Allowed Wattage	Proposed Wattage	% Above/Below Code	Watts Saved
	0	87083	#DIV/0!	-87083
Hours of Operation	Electric Rate	kWh Saved	\$ Saved	
0	0	0	0	

Occupancy Sensor Summary				
Watts Controlled	OS>500W	OS<500W	OS Total	
77989	67	143	210	

Photocell Sensor Summary				
Watts Controlled	OS>500W	OS<500W	OS Total	
44589	40	0	40	

Room Type	Area	COMcheck Rating	Allowed Wattage	Proposed Wattage
Audience	0	0.9	0	0
Classroom	24686	1.4	34560.4	30550
Conference Room	2761	1.3	3589.3	3871
Dining	3344	0.9	3009.6	5822
Dorm Room	0	1.1	0	0
Exam/Treatment	0	1.5	0	0
Exercise Area	0	0.9	0	0
Food Prep	1176	1.2	1411.2	1773
Gym	8149	2.3	18742.7	13400
Hall	9963	0.5	4981.5	10027
Laboratory	0	1.4	0	0
Laundry	0	0.6	0	0
Lobby	402	1.3	522.6	740
Locker	678	0.6	406.8	1072
Lounge	0	1.2	0	0
Mail Sorting	0	1.2	0	0
Mech/Elec	4871	1.5	7306.5	4066
Nurse	327	1	327	341
Office	3573	1.1	3930.3	4739
Operating Room	0	2.2	0	0
Parking Garage	0	0.2	0	0
Patient Room	0	0.7	0	0
Pharmacy	0	1.2	0	0
Reading	1728	1.2	2073.6	5920
Restroom	1891	0.9	1701.9	1690
Sales Area	0	1.7	0	0
Stacks	0	1.7	0	0
Stairs	0	0.6	0	0
Storage	2635	0.8	2108	3072
Workshop	0	1.9	0	0
<b>Totals</b>	<b>66184</b>		<b>84671.4</b>	<b>87083</b>













Port Clinton City Schools  
 Middle School  
 VFD Savings Calculation

Attachment F

TAG	Quantity	Motor hp	Eff	Runtime*	Load Factor	Usage(kWh)	Usage w/ VFD***
DOAS-B101	2	20	0.93	3000	0.8	76965.16129	61572.12903
DOAS-B101	2	7.5	0.91	3000	0.8	29496.26374	23597.01099
AHU-C201	1	25	0.936	3000	0.8	47794.87179	38235.89744
HRU-C202	1	5	0.895	3000	0.8	9996.871508	7997.497207
HRU-C202	1	40	0.941	3000	0.8	76065.46227	60852.36982
P-C201a & b	2	20	0.93	1930	0.8	49514.25376	39611.40301
P-C202a & b	2	20	0.93	1080	0.8	27707.45806	22165.96645
P-c203a & b	2	15	0.93	1080	0.8	20780.59355	16624.47484
						<b>Savings</b>	<b>67664.2</b>

\*Runtime estimated based on school schedule

12 hrs/day \* 180 school days + 8hrs/day on weekends\*72 days + 6hrs/day in summer \* 45 days

\*\*The HHW pumps only run during the heating season

12 hrs/day \* 130 school days + 8hrs/day on weekends\*46 days

\*\*\*

VFD Usage based on a 20% reduction in total energy use. This percentage is based on typical reductions measured in similar applications. 20% is fairly conservative

ative, actual savings are probably higher

Customer Legal Entity Name: Port Clinton City School District

Site Address: Bataan Elementary

Principal Address: 525 W. 6th Street

What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date. Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.

Project No.	Project Name	Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:	Description of methodologies, protocols and practices used in measuring and verifying project results	What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date.	Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.
1	Lighting Controls	Occupancy and daylighting sensors installed to shut the lights off when no motion or sunlight is detected.	The energy savings and rebate amount input into Exhibit 2A are taken from the FE Lighting Rebate Calculator (OE.PortClinton.Bataan.Lighting Project Cash Rebate Form). The number of sensors and watts controlled can be found in the Bataan building lighting countsheet, Attachment A: OE.PortClinton.Bataan.LightingCountsheets.ATTACHMENT.A.xlsx	N/A	Less efficient would be to install no sensors
2	Variable Frequency Drives	Variable Frequency drives were installed on heating and chilled water pumps as well as air handler supply and exhaust fans throughout the elementary	Data was gathered from the mechanical schedules (OE.PortClinton.Bataan.MechSchedule.AttachmentG.pdf) and input to the motors and drives rebate calculator to determine the cash rebate amount. kWh savings were calculated based on approximate runtimes for the different motor applications (see: attachment E: OE.PortClinton_Bataan.VFD.Calcs_ATTACHMENT.E.xlsx)	N/A	No motor controls
3	Energy Efficient Chillers	(2) new energy efficient York air cooled chillers were installed at the elementary to provide chilled water to the chilled beam system.	Data was gathered from the chiller specifications (OE.PortClinton.ChillerSpecs.AttachmentI.pdf) input to the savings calculator (OE.PCCS.Bataan.Chiller.Calc.AttachmentK.xlsx) to determine the kWh savings which was then input to the custom rebate calculator to determine the cash rebate amount.	N/A	ASHRAE code minimum chillers



**Commitment  
Payment  
\$**



**\$0**

**Exhibit 3 Utility Cost Test**

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost \$/MWh (B)	Utility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	126	\$ 308	\$ 38,860	\$ 1,350	\$6,395	\$1,261	\$ 9,006	<b>4.3</b>
2	74	\$ 308	\$ 22,813	\$ 1,350	\$6,629	\$740	\$ 8,719	<b>2.62</b>
3	66	\$ 308	\$ 20,366	\$ 1,350	\$3,964	\$661	\$ 5,974	<b>3.41</b>
<b>Total</b>	<b>266</b>	<b>\$ 308</b>	<b>82,039</b>	<b>4,050</b>	<b>\$16,988</b>	<b>\$2,661</b>	<b>23,699</b>	<b>3.5</b>

**Notes**

- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration’s 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better representation of the energy price that Ohio customers would see, a Cinergy Hub equivalent price was derived by applying a ratio based on three years of historic national average and Cinergy Hub prices. This value is consistent with avoided cost assumptions used in EE&PDR Program Portfolio and Initial Benchmark Report, filed Dec 15, 2009 (See Section 8.1, paragraph a).
- (C) = (A) \* (B)
- (D) Represents the utility's costs incurred for self-directed mercantile applications for applications filed and applications in progress. Includes incremental costs of legal fees, fixed administrative expenses, etc.
- (E) This is the amount of the cash rebate paid to the customer for this project.
- (F) Based on approximate Administrator’s variable compensation for purposes of calculating the UCT, actual compensation may be less.
- (G) = (D) + (E) + (F)
- (H) =(C) / (G)

**Port Clinton City School District ~ Bataan Elementary**  
**Docket No. 13-0533**

**Site:** 525 W. 6th Street





## Project Estimated Annual Savings Summary

Estimated Annual kWh Savings	126,055
Total Change in Connected Load	-1.05

Annual Estimated Cost Savings	\$12,605.50
Annual Operating Hours	2,080

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	-\$122.65
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$0.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/sensor (includes all Lighting Controls, both interior and exterior)	\$8,650.00

Total Calculated Incentive	\$8,527.35
----------------------------	------------

Total Fixture Quantity excluding retrofit CFLs and LED Exit Sign	1
Total Lamp Quantity for retrofit Screw-In CFLs	0
Total Lamp Quantity for retrofit Hard-Wired CFLs	0
Total Fixture Quantity for retrofit LED Exit Signs	0
Total Quantity for Occupancy Sensors	0
Total Quantity for Daylight Sensors	346

Please briefly describe how you estimated your coincidence factor (CF) and applicant equivalent full-load hours (EFLH) for facility type "Other" indicated on the Lighting Form tab

Demand Savings (For Internal Use Only)

-0.80



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Project Name:	
Site Name:	
Completed by (Name):	
Date completed:	

**Motor Rebate Calculation Form**

Motor ID, Location, and Operation Data				Old Motor Nameplate Data								New Motor Nameplate Data								Total Motor Incentive¹ \$		
Unique Motor ID(s)	Number of Identical Units	Motor Location	Annual Hours of Op²	Loading (Constant, or if variable, indicate control type)	Load Factor (LF)³	Enclosure type: TEFC or ODP	Mfr.	Model Number	Motor HP	Nominal Efficiency	Speed (RPM)	Loading (Constant, or if variable, indicate control type)	Load Factor (LF)³	Enclosure type: TEFC or ODP	Mfr.	Model Number	Motor HP	Nominal Efficiency	Speed (RPM)			
<b>Incentive (through 10/11/2011)</b>																				<b>\$0</b>		

Motor IDs may be specified by HVAC application type and number. Application types eligible for this incentive include:  
 - Chilled Water Pump (CHWP),  
 - Heating Hot Water Pump (HHWP),  
 - HVAC Fans (HVACF),  
 - Cooling Tower Fan (CTF), and  
 - Condensing Water Pump (CWP).  
 If the HVAC application is not listed above, please describe the application on a separate sheet and include it with your application package.

- (1) Motor incentives are listed in Table 2 - Incentive levels per motor located on Motor Incentive Table tab
- (2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.
- (3) For all motor applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.



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Table 1 - Minimum Motor Efficiency Requirements (NEMA Premium® Efficiencies)

Open Drip Proof (ODP)				Totally Enclosed Fan-Cooled (TEFC)			
Size HP	# of Poles			Size HP	# of Poles		
	6	4	2		6	4	2
	Speed (RPM)				Speed (RPM)		
	1200	1800	3600		1200	1800	3600
1	82.50%	85.50%	77.00%	1	82.50%	85.50%	77.00%
1.5	96.50%	86.50%	84.00%	1.5	87.50%	86.50%	84.00%
2	87.50%	86.50%	85.50%	2	88.50%	86.50%	85.50%
3	88.50%	89.50%	85.50%	3	89.50%	89.50%	86.50%
5	89.50%	89.50%	86.50%	5	89.50%	89.50%	88.50%
7.5	90.20%	91.00%	88.50%	7.5	91.00%	91.70%	89.50%
10	91.70%	91.70%	89.50%	10	91.00%	91.70%	90.20%
15	91.70%	93.00%	90.20%	15	91.70%	92.40%	91.00%
20	92.40%	93.00%	91.00%	20	91.70%	93.00%	91.00%
25	93.00%	93.60%	91.70%	25	93.00%	93.60%	91.70%
30	93.60%	94.10%	91.70%	30	93.00%	93.60%	91.70%
40	94.10%	94.10%	92.40%	40	94.10%	94.10%	92.40%
50	94.10%	94.50%	93.00%	50	94.10%	94.50%	93.00%
60	94.50%	95.00%	93.60%	60	94.50%	95.00%	93.60%
75	94.50%	95.00%	93.60%	75	94.50%	95.40%	93.60%
100	95.00%	95.40%	93.60%	100	95.00%	95.40%	94.10%
125	95.00%	95.40%	94.10%	125	95.00%	95.40%	95.00%
150	95.40%	95.80%	94.10%	150	95.80%	95.80%	95.00%
200	95.40%	95.80%	95.00%	200	95.80%	96.20%	95.40%

Table 2 - Incentive Levels Per Motor through 10/11/2011

Open Drip Proof (ODP)				Totally Enclosed Fan-Cooled (TEFC)			
Size HP	# of Poles			Size HP	# of Poles		
	6	4	2		6	4	2
	Speed (RPM)				Speed (RPM)		
	1200	1800	3600		1200	1800	3600
1	\$25	\$25	\$25	1	\$25	\$25	\$25
1.5	\$30	\$30	\$30	1.5	\$30	\$30	\$30
2	\$60	\$60	\$60	2	\$60	\$60	\$60
3	\$60	\$60	\$60	3	\$60	\$60	\$60
5	\$60	\$60	\$60	5	\$60	\$60	\$60
7.5	\$80	\$80	\$80	7.5	\$80	\$80	\$80
10	\$80	\$80	\$80	10	\$80	\$80	\$80
15	\$125	\$125	\$125	15	\$125	\$125	\$125
20	\$125	\$125	\$125	20	\$125	\$125	\$125
25	\$164	\$164	\$164	25	\$164	\$164	\$164
30	\$199	\$199	\$199	30	\$199	\$199	\$199
40	\$234	\$234	\$234	40	\$234	\$234	\$234
50	\$269	\$269	\$269	50	\$269	\$269	\$269
60	\$304	\$304	\$304	60	\$304	\$304	\$304
75	\$339	\$339	\$339	75	\$339	\$339	\$339
100	\$374	\$374	\$374	100	\$374	\$374	\$374
125	\$410	\$410	\$410	125	\$410	\$410	\$410
150	\$445	\$445	\$445	150	\$445	\$445	\$445
200	\$468	\$468	\$468	200	\$468	\$468	\$468



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Project Name:	Port Clinton City School District
Site Name:	Bataan Elementary
Completed by (Name):	Neil
Date completed:	10/11/2012

### Variable Frequency Drive Rebate Form

VFD and Controlled Motor Nameplate DATA											Total Motor Incentive <sup>1</sup> \$
Motor Application	VFD Manufacturer	VFD Model Number	Unique Motor ID(s)	Motor Location	Enclosure type: TEFC or ODP	Annual Hours of Operation <sup>2</sup>	Load Factor (LF) <sup>3</sup>	Motor Model Number	Motor HP	Motor Nominal Efficiency	
Supply Fan	Yaskawa	P7	AHU-D101 S	AHU-D101	ODP	2790	0.8		50	94.5	<b>1,750</b>
Supply Fan	Yaskawa	P7	AHU-D101 S	AHU-D203	ODP	2790	0.8		7.5	91	<b>263</b>
Supply Fan	Yaskawa	P7	DOAS-D201	DOAS-D201	ODP	2790	0.8		30	94.1	<b>1,050</b>
Supply Fan	Yaskawa	P7	DOAS-D202	DOAS-D202	ODP	2790	0.8		25	93.6	<b>875</b>
Exhaust Fan	Yaskawa	P7	DOAS-D201-	DOAS-D201-202	ODP	2790	0.8		15(2)	93	<b>1,050</b>
HHWP	Yaskawa	P7	P-D101a & b	mech	ODP	5520	0.8		20 (2)	93	<b>1,400</b>
<b>Incentive through 10/11/2011 @ \$35/hp</b>											<b>6,388</b>

(1) VFD incentives (through 10/11/2011) are calculated at a flat rate of \$35 per horsepower controlled, up to a maximum of 500 hp controlled per VFD.

When a single VFD is used to control two motors in a lead/lag (standby, redundant) configuration, use only the horsepower rating of one motor to figure controlled horsepower. For instance, if a single VFD controls two 30hp motors with only one operating at a time, the incentive calculation should be based on 30 hp: 30hp x \$35/hp = \$900.

(2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.

(3) For all motor and VFD applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.



Ohio Edison • The Illuminating Company • Toledo Edison

Project Name:	Port Clinton City School District
Site Name:	Bataan Elementary
Completed by (Name):	Neil
Date completed:	10/11/2012

### Variable Frequency Drive Rebate Form

VFD and Controlled Motor Nameplate DATA											Total Motor Incentive <sup>1</sup> \$
Motor Application	VFD Manufacturer	VFD Model Number	Unique Motor ID(s)	Motor Location	Enclosure type: TEFC or ODP	Annual Hours of Operation <sup>2</sup>	Load Factor (LF) <sup>3</sup>	Motor Model Number	Motor HP	Motor Nominal Efficiency	
CHWP	Yaskawa	P7	P-D102a & b	mech	ODP	5520	0.8		15(2)	93	<b>1,050</b>
CHWP	Yaskawa	P7	P-D103a & b	mech	ODP	5520	0.8		20(2)	93	<b>1,400</b>
<b>Incentive through 10/11/2011 @ \$35/hp</b>											<b>2,450</b>

- (1) VFD incentives (through 10/11/2011) are calculated at a flat rate of \$35 per horsepower controlled, up to a maximum of 500 hp controlled per VFD. When a single VFD is used to control two motors in a lead/lag (standby, redundant) configuration, use only the horsepower rating of one motor to figure controlled horsepower. For instance, if a single VFD controls two 30hp motors with only one operating at a time, the incentive calculation should be based on 30 hp: 30hp x \$35/hp = \$900.
- (2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.
- (3) For all motor and VFD applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.

Client: Port Clinton City Schools  
 Site: Bataan Elementary School ATCH. A  
 Prepared By: Trace Searles  
 Date Last Worked On: 9/19/2012



Room By Room COMcheck Summary				
Area (sq ft)	Allowed Wattage	Proposed Wattage	% Above/Below Code	Watts Saved
90587	109272.8	110326	✘ -0.96%	-1053.2
Hours of Operation	Electric Rate	kWh Saved	\$ Saved	
0	0	0	0	

Whole Building COMcheck Summary				
Building Type	COMcheck Rating			
School	1.2			
Area	Allowed Wattage	Proposed Wattage	% Above/Below Code	Watts Saved
	0	110326	#DIV/0!	-110326
Hours of Operation	Electric Rate	kWh Saved	\$ Saved	
0	0	0	0	

Occupancy Sensor Summary			
Watts Controlled	OS>500W	OS<500W	OS Total
96840	111	187	298

Photocell Sensor Summary			
Watts Controlled	OS>500W	OS<500W	OS Total
47163	48	0	48

Room Type	Area	COMcheck Rating	Allowed Wattage	Proposed Wattage
Audience	0	0.9	0	0
Classroom	40373	1.4	56522.2	52628
Conference Room	3431	1.3	4460.3	4270
Dining	4090	0.9	3681	9642
Dorm Room	0	1.1	0	0
Exam/Treatment	0	1.5	0	0
Exercise Area	0	0.9	0	0
Food Prep	1532	1.2	1838.4	2140
Gym	6354	2.3	14614.2	10368
Hall	17024	0.5	8512	8595
Laboratory	0	1.4	0	0
Laundry	0	0.6	0	0
Lobby	88	1.3	114.4	91
Locker	605	0.6	363	377
Lounge	0	1.2	0	0
Mail Sorting	0	1.2	0	0
Mech/Elec	4285	1.5	6427.5	2738
Nurse	612	1	612	887
Office	3186	1.1	3504.6	3952
Operating Room	0	2.2	0	0
Parking Garage	0	0.2	0	0
Patient Room	0	0.7	0	0
Pharmacy	0	1.2	0	0
Reading	2768	1.2	3321.6	8637
Restroom	3104	0.9	2793.6	2492
Sales Area	0	1.7	0	0
Stacks	0	1.7	0	0
Stairs	0	0.6	0	0
Storage	3135	0.8	2508	3509
Workshop	0	1.9	0	0
<b>Totals</b>	<b>90587</b>		<b>109272.8</b>	<b>110326</b>

**Port Clinton City Schools**  
**Bataan Elementary**

**Attachment K**

**Energy Efficient Chiller Calculation**

Make	Model	Quantity	IPLV	Runtime	Tons	Load Factor
York	YLAA0141HE	2	14.4	2246	131.1	0.35

Savings (kWh)
66,063

Binned Weather Data : Toledo Ohio  
 725360TY (1).bin

StrTemp	EndTemp	T(F)	Twb(F)	h(Btu/lba)	w(lbw/lba)	hrs1-8	hrs9-16	hrs17-24	hrs1-24
105	109	107	-99	-99	-99	0	0	0	0
100	104	102	-99	-99	-99	0	0	0	0
95	99	97	-99	-99	-99	0	0	0	0
90	94	91.3	74.8	38.3	0.0148	0	11	5	16
85	89	87.7	72.4	36.2	0.0138	0	57	23	80
80	84	82.1	68.8	33.3	0.0124	0	229	93	322
75	79	76.7	66	31.2	0.0117	23	289	178	490
70	74	72.5	63.8	29.6	0.0112	80	246	211	537
65	69	67.9	61.9	28.2	0.0109	268	260	273	801
60	64	62.6	57	24.9	0.0091	336	243	293	872
55	59	57.2	51.9	21.7	0.0073	264	172	246	682
50	54	52.1	47.5	19.1	0.0061	260	192	206	658
45	49	47.4	43.5	16.8	0.005	225	133	167	525

40	44	43	39.6	14.8	0.0041	199	199	197	595
35	39	37.4	35.8	12.7	0.0035	329	248	311	888
30	34	32.1	31.6	10.6	0.0027	269	182	180	631
25	29	27.6	28.2	9	0.0022	203	146	167	516
20	24	23.1	24.9	7.4	0.0017	150	100	147	397
15	19	17.4	20.9	5.6	0.0013	117	110	78	305
10	14	12	17.4	4	0.001	70	58	76	204
5	9	7.4	14.4	2.7	0.0008	56	20	42	118
0	4	2.6	11.3	1.3	0.0006	35	19	14	68
-5	-1	-1.7	8.5	0.1	0.0005	25	6	13	44
-10	-6	-7.1	5.1	-1.3	0.0004	11	0	0	11

<b>ASHRAE 2007 Baseline IPLV</b>
10.4

Port Clinton City Schools  
 Bataan Elementary  
 VFD Savings Calculation

Attachment E

TAG	Quantity	Motor hp	Eff	Runtime*	Load Factor	Usage(kWh)	Usage w/ VFD***
AHU-D101 S	1	50	0.945	3000	0.8	94679.36508	75743.49206
AHU-D101 S	1	7.5	0.91	3000	0.8	14748.13187	11798.50549
DOAS-D201	1	30	0.941	3000	0.8	57049.09671	45639.27736
DOAS-D202	1	25	0.936	3000	0.8	47794.87179	38235.89744
DOAS-D201-202	2	15	0.93	3000	0.8	57723.87097	46179.09677
P-D101a & b	2	20	0.93	1930	0.8	49514.25376	39611.40301
P-D102a & b	2	15	0.93	1080	0.8	20780.59355	16624.47484
P-D103a & b	2	20	0.93	1080	0.8	27707.45806	22165.96645
						<b>Savings</b>	<b>73999.5</b>

\*Runtime estimated based on school schedule

12 hrs/day \* 180 school days + 8hrs/day on weekends\*72 days + 6hrs/day in summer \* 45 days

\*\*The HHW pumps only run during the heating season

12 hrs/day \* 130 school days + 8hrs/day on weekends\*46 days

\*\*\*

VFD Usage based on a 20% reduction in total energy use. This percentage is based on typical reductions measured in similar applications.

20% is fairly conservative, actual savings are probably higher.

Mercantile Customer Project Commitment Agreement  
Cash Rebate Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between Ohio Edison Company, its successors and assigns (hereinafter called the "Company") and Port Clinton City School District, Taxpayer ID No. 34-6401093 its permitted successors and assigns (hereinafter called the "Customer") (collectively the "Parties" or individually the "Party") and is effective on the date last executed by the Parties as indicated below.

WITNESSETH

WHEREAS, the Company is an electric distribution utility and electric light company, as both of these terms are defined in R.C. § 4928.01(A); and

WHEREAS, Customer is a mercantile customer, as that term is defined in R.C. § 4928.01(A)(19), doing business within the Company's certified service territory; and

WHEREAS, R.C. § 4928.66 (the "Statute") requires the Company to meet certain energy efficiency and peak demand reduction ("EE&PDR") benchmarks; and

WHEREAS, when complying with certain EE&PDR benchmarks the Company may include the effects of mercantile customer-sited EE&PDR projects; and

WHEREAS, Customer has certain customer-sited demand reduction, demand response, or energy efficiency project(s) as set forth in attached Exhibit 1 (the "Customer Energy Project(s)") that it desires to commit to the Company for integration into the Company's Energy Efficiency & Peak Demand Reduction Program Portfolio Plan ("Company Plan") that the Company will implement in order to comply with the Statute; and

WHEREAS, the Customer, pursuant to the Public Utilities Commission of Ohio's ("Commission") September 15, 2010 Order in Case No. 10-834-EL-BEC, desires to pursue a cash rebate of some of the costs pertaining to its Customer Energy Project(s) ("Cash Rebate") and is committing the Customer Energy Project(s) as a result of such incentive.

WHEREAS, Customer's decision to commit its Customer Energy Project(s) to the Company for inclusion in the Company Plan has been reasonably encouraged by the possibility of a Cash Rebate.

WHEREAS, in consideration of, and upon receipt of, said cash rebate, Customer will commit the Customer Energy Project(s) to the Company and will comply with all other terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, do hereby agree as follows:

1. **Customer Energy Projects.** Customer hereby commits to the Company and Company accepts for integration into the Company Plan the Customer Energy Project(s) set forth on attached Exhibit 1. Said commitment shall be for the life of the Customer Energy Project(s). Company will incorporate said project(s) into the Company Plan to the extent that such projects qualify. In so committing, and as evidenced by the affidavit attached hereto as Exhibit A, Customer acknowledges that the information provided to the Company about the Customer Energy Project(s) is true and accurate to the best of its knowledge.

- a. By committing the Customer Energy Project(s) to the Company, Customer acknowledges and agrees that the Company shall control the use of the kWh and/or kW reductions resulting from said projects for purposes of complying with the Statute. By committing the Customer Energy Project(s), Customer further acknowledges and agrees that the Company shall take ownership of the energy efficiency capacity rights associated with said Project(s) and shall, at its sole discretion, aggregate said capacity into the PJM market through an auction. Any proceeds from any such bids accepted by PJM will be used to offset the costs charged to the Customer and other of the Company's customers for compliance with state mandated energy efficiency and/or peak demand requirements
  - b. The Company acknowledges that some of Customer's Energy Projects contemplated in this paragraph may have been performed under certain other federal and/or state programs in which certain parameters are required to be maintained in order to retain preferential financing or other government benefits (individually and collectively, as appropriate, "Benefits"). In the event that the use of any such project by the Company in any way affects such Benefits, and upon written request from the Customer, Company will release said Customer's Energy Project(s) to the extent necessary for Customer to meet the prerequisites for such Benefits. Customer acknowledges that such release (i) may affect Customer's cash rebate discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations.
  - c. Any future Customer Energy Project(s) committed by Customer shall be subject to a separate application and, upon approval by the Commission, said projects shall become part of this Agreement.
  - d. Customer will provide Company or Company's agent(s) with reasonable assistance in the preparation of the Commission's standard joint application for approval of this Agreement ("Joint Application") that will be filed with the Commission, with such Joint Application being consistent with then current Commission requirements.
  - e. Upon written request and reasonable advance notice, Customer will grant employees or authorized agents of either the Company or the Commission reasonable, pre-arranged access to the Customer Energy Project(s) for purposes of measuring and verifying energy savings and/or peak demand reductions resulting from the Customer Energy Project(s). It is expressly agreed that consultants of either the Company or the Commission are their respective authorized agents.
2. **Joint Application to the Commission.** The Parties will submit the Joint Application using the Commission's standard "Application to Commit Energy Efficiency/Peak Demand Reduction Programs" ("Joint Application") in which they will seek the Commission's approval of (i) this Agreement; (ii) the commitment of the Customer Energy Project(s) for inclusion in the Company Plan; and (iii) the Customer's Cash Rebate.

The Joint Application shall include all information as set forth in the Commission's standard form which, includes without limitation:

- i. A narrative description of the Customer Energy Project(s), including but not limited to, make, model and year of any installed and/or replaced equipment;
- ii. A copy of this Agreement; and
- iii. A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results.

3. **Customer Cash Rebate.** Upon Commission approval of the Joint Application, Customer shall provide Company with a W-9 tax form, which shall at a minimum include Customer's tax identification number. Within the greater of 90 days of the Commission's approval of the Joint Application or the completion of the Customer Energy Project, the Company will issue to the Customer the Cash Rebate in the amount set forth in the Commission's Finding and Order approving the Joint Application.
  - a. Customer acknowledges: i) that the Company will cap the Cash Rebate at the lesser of 50% of Customer Energy Project(s) costs or \$250,000; ii) the maximum rebate that the Customer may receive per year is \$500,000 per Taxpayer Identification Number per utility service territory; and iii) if the Customer Energy Project qualifies for a rebate program approved by the Commission and offered by the Company, Customer may still elect to file such project under the Company's mercantile customer self direct program, however the Cash Rebate that will be paid shall be discounted by 25%; and
  - b. Customer acknowledges that breaches of this Agreement, include, but are not limited to:
    - i. Customer's failure to comply with the terms and conditions set forth in the Agreement, or its equivalent, within a reasonable period of time after receipt of written notice of such non-compliance;
    - ii. Customer knowingly falsifying any documents provided to the Company or the Commission in connection with this Agreement or the Joint Application.
  - c. In the event of a breach of this Agreement by the Customer, Customer agrees and acknowledges that it will repay to the Company, within 90 days of receipt of written notice of said breach, the full amount of the Cash Rebate paid under this Agreement. This remedy is in addition to any and all other remedies available to the Company by law or equity.
4. **Termination of Agreement.** This Agreement shall automatically terminate:
  - a. If the Commission fails to approve the Joint Agreement;
  - b. Upon order of the Commission; or
  - c. At the end of the life of the last Customer Energy Project subject to this Agreement.

Customer shall also have an option to terminate this Agreement should the Commission not approve the Customer's Cash Rebate, provided that Customer provides the Company with written notice of such termination within ten days of either the Commission issuing a final appealable order or the Ohio Supreme Court issuing its opinion should the matter be appealed.

5. **Confidentiality.** Each Party shall hold in confidence and not release or disclose to any person any document or information furnished by the other Party in connection with this Agreement that is designated as confidential and proprietary ("Confidential Information"), unless: (i) compelled to disclose such document or information by judicial, regulatory or administrative process or other provisions of law; (ii) such document or information is generally available to the public; or (iii) such document or information was available to the receiving Party on a non-confidential basis at the time of disclosure.
  - a. Notwithstanding the above, a Party may disclose to its employees, directors, attorneys, consultants and agents all documents and information furnished by the other Party in connection with this Agreement, provided that such employees, directors, attorneys,

consultants and agents have been advised of the confidential nature of this information and through such disclosure are deemed to be bound by the terms set forth herein.

- b. A Party receiving such Confidential Information shall protect it with the same standard of care as its own confidential or proprietary information.
  - c. A Party receiving notice or otherwise concluding that Confidential Information furnished by the other Party in connection with this Agreement is being sought under any provision of law, to the extent it is permitted to do so under any applicable law, shall endeavor to: (i) promptly notify the other Party; and (ii) use reasonable efforts in cooperation with the other Party to seek confidential treatment of such Confidential Information, including without limitation, the filing of such information under a valid protective order.
  - d. By executing this Agreement, Customer hereby acknowledges and agrees that Company may disclose to the Commission or its Staff any and all Customer information, including Confidential Information, related to a Customer Energy Project, provided that Company uses reasonable efforts to seek confidential treatment of the same.
6. **Taxes.** Customer shall be responsible for all tax consequences (if any) arising from the payment of the Cash Rebate.
7. **Notices.** Unless otherwise stated herein, all notices, demands or requests required or permitted under this Agreement must be in writing and must be delivered or sent by overnight express mail, courier service, electronic mail or facsimile transmission addressed as follows:

**If to the Company:**

FirstEnergy Service Company  
76 South Main Street  
Akron, OH 44308  
Attn: Victoria Nofziger  
Telephone: 330-384-4684  
Fax: 330-761-4281  
Email: [vmnofziger@firstenergycorp.com](mailto:vmnofziger@firstenergycorp.com)

**If to the Customer:**

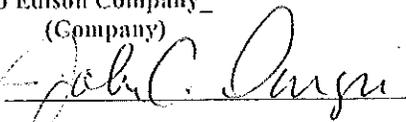
Port Clinton City School District  
431 Portage Dr.  
Port Clinton, Ohio 43452  
Attn: Jeff Dornbusch  
Telephone: 419.732.2102  
Fax:  
Email: [jdornbusch@pccsd.net](mailto:jdornbusch@pccsd.net)

or to such other person at such other address as a Party may designate by like notice to the other Party. Notice received after the close of the business day will be deemed received on the next business day; provided that notice by facsimile transmission will be deemed to have been received by the recipient if the recipient confirms receipt telephonically or in writing.

8. **Authority to Act.** The Parties represent and warrant that they are represented by counsel in connection with this Agreement, have been fully advised in connection with the execution thereof, have taken all legal and corporate steps necessary to enter into this Agreement, and that the undersigned has the authority to enter into this Agreement, to bind the Parties to all provisions herein and to take the actions required to be performed in fulfillment of the undertakings contained herein.
9. **Non-Waiver.** The delay or failure of either party to assert or enforce in any instance strict performance of any of the terms of this Agreement or to exercise any rights hereunder conferred, shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights at any later time or on any future occasion.
10. **Entire Agreement.** This Agreement, along with related exhibits, and the Company's Rider DSE, or its equivalent, as amended from time to time by the Commission, contains the Parties' entire understanding with respect to the matters addressed herein and there are no verbal or collateral representations, undertakings, or agreements not expressly set forth herein. No change in, addition to, or waiver of the terms of this Agreement shall be binding upon any of the Parties unless the same is set forth in writing and signed by an authorized representative of each of the Parties. In the event of any conflict between Rider DSE or its equivalent and this document, the latter shall prevail.
11. **Assignment.** Customer may not assign any of its rights or obligations under this Agreement without obtaining the prior written consent of the Company, which consent will not be unreasonably withheld. No assignment of this Agreement will relieve the assigning Party of any of its obligations under this Agreement until such obligations have been assumed by the assignee and all necessary consents have been obtained.
12. **Severability.** If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remaining portions of this Agreement, and the Parties further agree to substitute for the invalid portion a valid provision that most closely approximates the economic effect and intent of the invalid provision.
13. **Governing Law.** This Agreement shall be governed by the laws and regulations of the State of Ohio, without regard to its conflict of law provisions.
14. **Execution and Counterparts.** This Agreement may be executed in multiple counterparts, which taken together shall constitute an original without the necessity of all parties signing the same page or the same documents, and may be executed by signatures to electronically or telephonically transmitted counterparts in lieu of original printed or photocopied documents. Signatures transmitted by facsimile shall be considered original signatures.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officers or representatives as of the day and year set forth below.

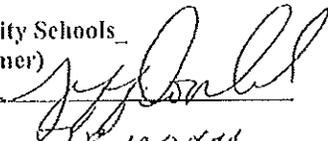
Ohio Edison Company\_  
(Company)

By: 

Title: V.P. Of Energy Efficiency

Date: 11-28-12

Port Clinton City Schools\_  
(Customer)

By: 

Title: TR-105011K

Date: 11-27-12

Affidavit of Port Clinton City Schools – Exhibit A

STATE OF OHIO                    )  
  )     SS:  
COUNTY OF Ottawa        )

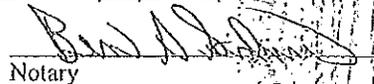
I, Jeff Dornbush ,being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Treasurer of Port Clinton City Schools (“Customer”) As part of my duties, I oversee energy related matters for the Customer.
2. The Customer has agreed to commit certain energy efficiency projects to Ohio Edison Company (“Company”), which are the subject of the agreement to which this affidavit is attached (“Project(s)”).
3. In exchange for making such a commitment, the Company has agreed to provide Customer with Cash (“Incentive”). This Incentive was a critical factor in the Customer’s decision to go forward with the Project(s) and to commit the Project(s) to the Company.
4. All information related to said Project(s) that has been submitted to the Company is true and accurate to the best of my knowledge.

FURTHER AFFIANT SAYETH NAUGHT.



Sworn to before me and subscribed in my presence this 27 day of November, 2012

  
Notary



BETH A. SANDWISCH  
Notary Public, State of Ohio  
My Commission Expires 8-31-14

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

**Commission of Ohio Docketing Information System on**

**3/23/2013 5:10:51 PM**

**in**

**Case No(s). 13-0533-EL-EEC**

Summary: Application electronically filed by Ms. Lindsey E Sacher on behalf of Ohio Edison Company and Port Clinton City School District