



2015

Energy Efficiency Program for Business

Custom Project Training

May 20, 2015



Safety First





Agenda

8:30 a.m. - Sign-in, safety review

8:35 p.m. - Program Overview

Custom Project Application

Custom Project - Lighting

Custom Project - Large Custom Project
(Non-Lighting)

10-10:30 a.m. - Engineer 1 on 1
(Open Forum/Specific Project Questions)



Since 2009:

- Nearly **\$102 million** in cash rebates has been paid to Michigan business customers:
 - Electric: **\$87 million**
 - Gas: **\$15 million**
- More than **32,000 projects** have been completed.
- And our customers have realized savings of:
 - **1,837 GWh** in electricity.
 - **4.7 million Mcf** in natural gas.
 - **\$220 million** in total energy costs.



For a customer to receive incentives

- Qualified measures must be installed at facilities served by DTE Energy.
- Projects must involve a **capital investment** that results in an improvement in energy efficiency of a system or building.
- The equipment installed must be new and meet the specifications spelled out in the Catalog.
- For each site, there must be at least one meter that is on an eligible rate schedule.
- You must be in good standing with DTE Energy and **not** be a Residential or Multifamily customer.



These do not qualify for an incentive

- Customers who self-direct (and have opted out of the program)
- Load shifting/demand limiting projects.
- Renewable energy projects.
- Power quality improvements.
- Fuel switching projects.
- On-site electricity generation.
- Changes in operational and/or maintenance practices or simple control modifications that do **NOT** involve capital costs.



Our Program timeline is simple:

Reservation Application



Application Review (may require pre-inspection)



Reservation Letter issued (Proceed with project)



Install Measures

(Project must start within 30 days and be completed within 90 days of approval or end of Program year, whichever comes first.)



Final Application & Review (submit within 60 days; may require post-inspection)



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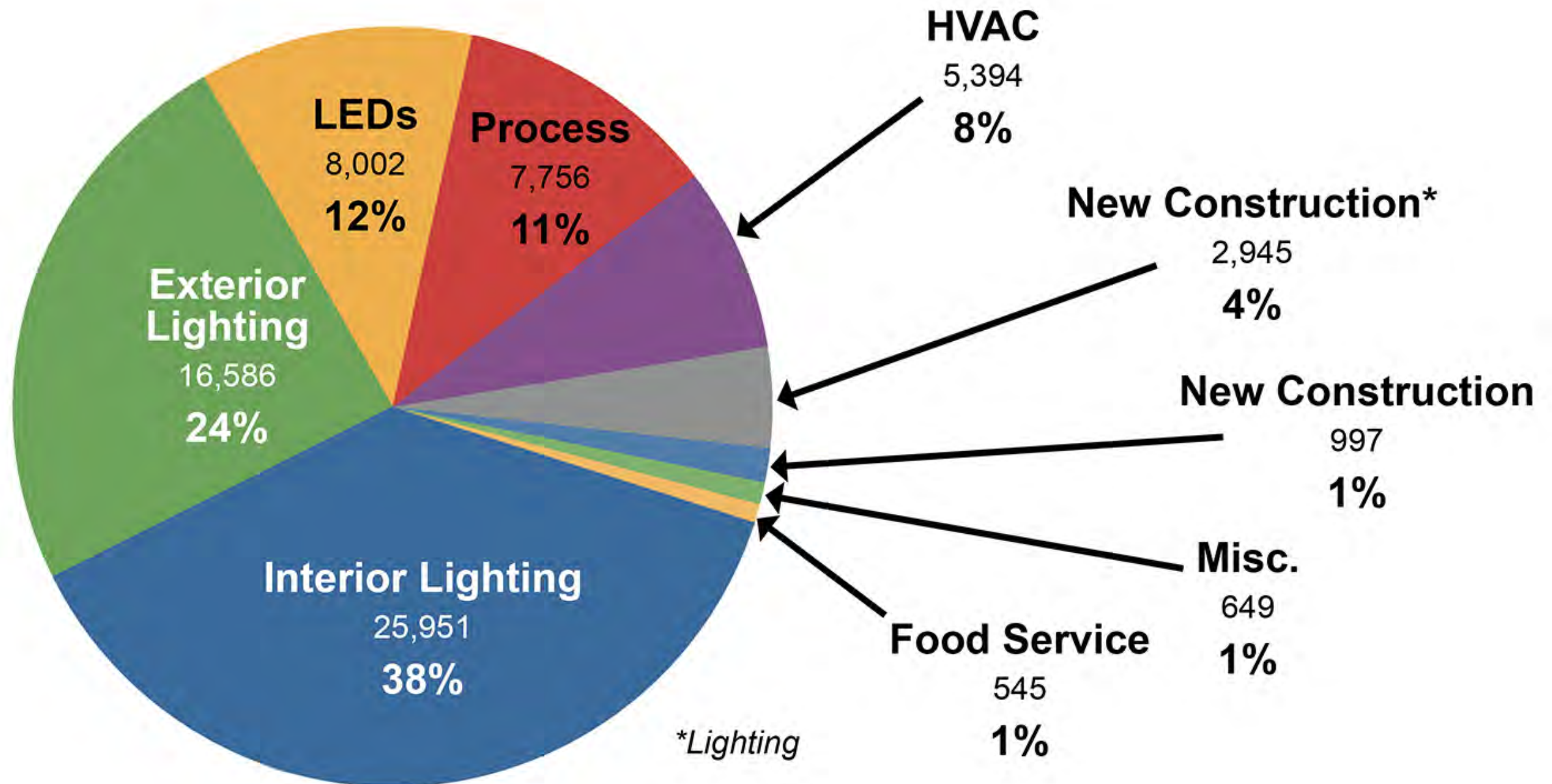


Our Program timeline is simple:



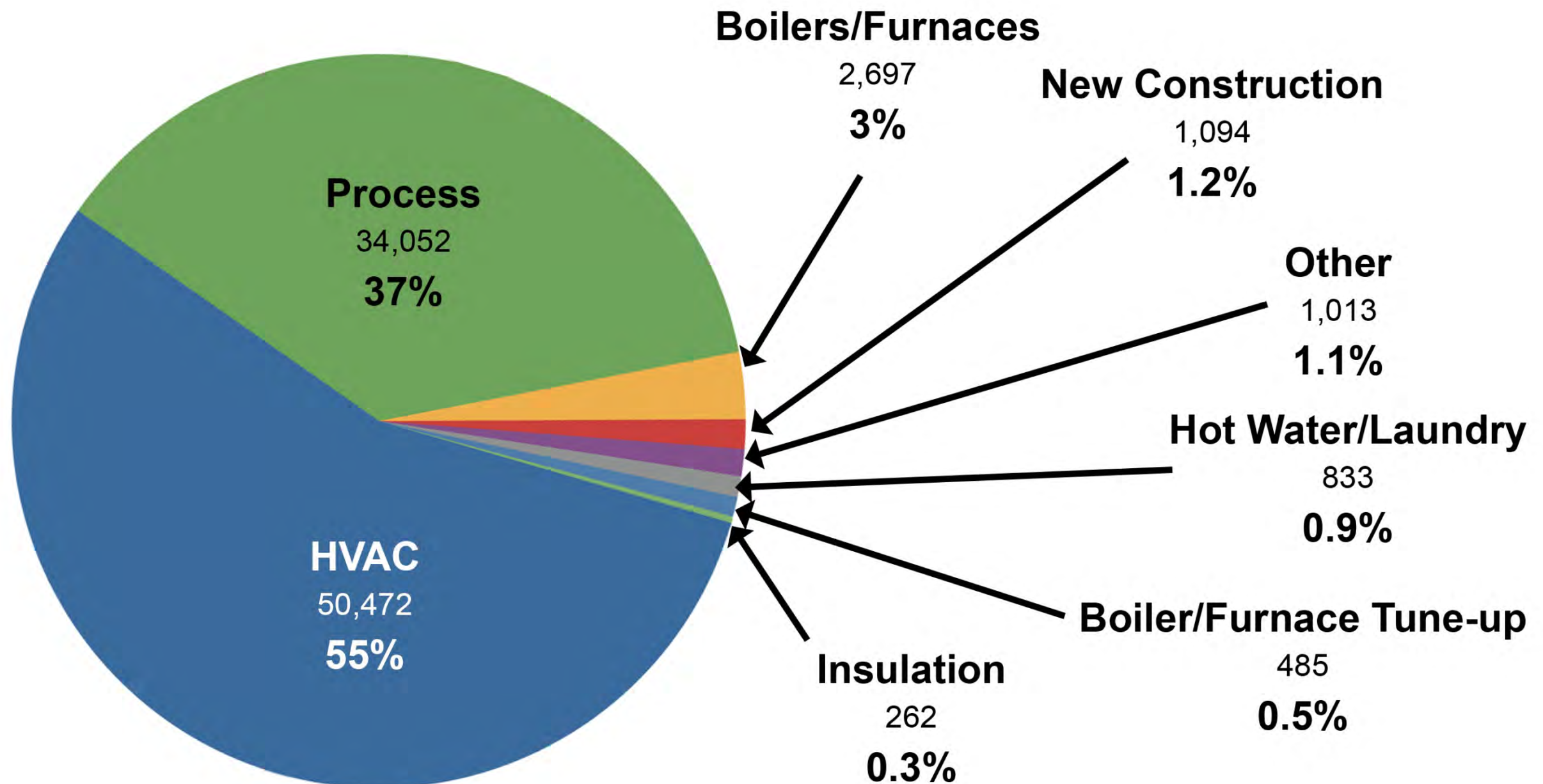


2014 Participation by Technology: Custom Electric (MWh)





2014 Participation by Technology: Custom Natural Gas (Mcf)



2015 Program Notice



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Important for 2015:

- The 2015 Program Year **ends Nov. 30.**
- This means:
 - No Reservations extend beyond Nov. 30.
 - Final Applications **must** be submitted within 60 days of project completion or Nov. 30, whichever comes first.
 - Incomplete Final Applications face cancellation.
 - Any Application submitted after Nov. 30 will be canceled.

Reservation Application Date

Expected Completion Date**

**Project funds will only be reserved for 90 days from date of Reservation and no Reservation will extend beyond Nov. 30, 2015.

Final Application Date

Actual Completion Date***

***Application must be submitted within 60 days of completion date or by Nov. 30, 2015, whichever comes first.



There are three types of Applications

Prescriptive

- **Predetermined** measures and incentives for the installation of various energy efficient improvements.
- Incentives typically average 20% to 50% of the incremental cost.

Custom

New Construction Major Renovation

- **New facilities/major renovations** of existing facilities or change of use projects.
- Adding load.



We're going to cover...

Prescriptive

- Predetermined measures and incentives for the installation of various energy efficient improvements.
- Incentives typically average 20% to 50% of the incremental cost.

Custom

- Capital investment projects that increase energy efficiency and are **NOT** eligible for a Prescriptive Incentive may qualify as a Custom Measure.
- Custom Incentives are determined on a case-by-case basis and are paid per unit energy saved (ex: \$0.07/kWh and/or \$4/Mcf).

New Construction Major Renovation

- New facilities/major renovations of existing facilities or change of use projects.
- Adding load.



About Reservations

A Reservation Application sets aside funds for your project to ensure availability when your project is completed and you submit your Final Application.

Prescriptive

- Reservation Applications are not required for most Prescriptive projects, **BUT** they are **highly recommended**.
- A Reservation Application **is required** for certain measures: check the Application for details.

Custom

- A Reservation Application **is required** for all Custom projects.

New Construction Major Renovation

- A Reservation Application **is encouraged** for all New Construction and Major Renovation projects.
- **NOTE:** **No Reservation will extend beyond Nov. 30, 2015.**

If you submit a Reservation Application, do **NOT** start your project until you receive a **Reservation Letter!***


How our program works



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Our Program Catalog and Application remain unchanged in design and function.

- The Application remains an **interactive PDF** file that performs automatic calculations

Energy Efficiency Program for Business	
 DTE Energy Know Your Own Power [®]	
2015 Program Application <small>This Application is to be used for projects completed with a Final Application submitted during the 2015 Program Year (Jan. 1, 2015 - Nov. 30, 2015).</small>	
Section 1 – Application	
Incentive Application Checklist.....	2
Customer Information.....	3
Contractor Information.....	4
Third Party Payment Authorization.....	4
Final Application Agreement.....	5
Incentive Summary, Final Agreement Information and Account Holder Signature Page.....	6
Section 2 – Incentive Worksheets	
Lighting Incentive Worksheet.....	7
HVAC Electric Incentive Worksheet.....	10
Miscellaneous Electric Incentive Worksheet.....	17
Process Electric Incentive Worksheet.....	18
Food Service – Electric and Refrigeration Incentive Worksheet.....	20
HVAC Gas Incentive Worksheet.....	22
Hot Water and Laundry Incentive Worksheet.....	23
Insulation Incentive Worksheet.....	24
Process Gas Incentive Worksheet.....	24
Boiler/Furnace Tune-up Incentive Worksheet.....	25
Food Service – Gas Incentive Worksheet.....	26
Custom Measures Worksheet Instructions.....	27
Prescriptive or Custom Project?.....	28
Custom Incentive Worksheet.....	29
Boiler/Furnace Tune-up Addendum.....	32
How to Submit Your Application.....	36
<small>For New Construction and Major Renovation projects, download our NC/MR Applications at dteenergy.com/saveenergy If you have questions about other projects and the appropriate Application to submit, contact us at 866-796-0512 (press option 3) or email us at saveenergy@dteenergy.com</small>	
V1:10/01/14	

DTE Energy
Energy Efficiency
Program for Business
**2015 Measures
and Specifications
Catalog**



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About our Application

Use it as a:

- **Reservation** Application
- and a
- **Final** Application

NOTE: Funds **must** be reserved for all custom projects and for certain prescriptive measures.

We **encourage** you to submit a Reservation Application for all **prescriptive** projects.

Energy Efficiency Program for Business	
 DTE Energy Know Your Own Power®	
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For New Construction and Major Renovation projects, download our NC/MR Applications at dteenergy.com/savenow	
If you have questions about other projects and the appropriate Application to submit, contact us at 866-796-0512 (press option 3) or email us at savenow@dteenergy.com	
V1:10/01/14	



The Custom Project Process

1. You **must** submit a Reservation Application.
2. Work with your Program reviewer to gather all relevant data.
3. Submit full documentation with your Application to keep the processing timeline moving.


2015 Program Application



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The following items are required to successfully complete your Reservation and Final Applications and receive incentive funding:

- Application Checklist
- Customer Information Sheet
- Prescriptive and/or Custom Incentive Worksheets
- Final Application Agreement
- Supporting Information, including invoices and product specifications


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Prescriptive and Custom Incentive Application Checklist
This form MUST be included with any Reservation and/or Final Application.
 If this is a New Construction or Major Renovation project, please use that Application, which can be found online at: dteenergy.com/savenow.

Submittal Date _____

Is this a revised Application? ☐ yes ☐ no

Application Number (if known) _____

Mail, fax or email completed forms and required documentation with itemized invoices to:

DTE Energy's Energy Efficiency Program For Business
 P.O. Box 11289
 Detroit MI 48211
Fax: 877.607.0744
Phone: 866.796.0512
Email: saveenergy@dteenergy.com
Web: dteenergy.com/savenow

Reservation Application
Fill out this side when reserving incentives

Required Attachment

☐ Customer Information3

☐ Contractor Information4

☐ W9 Tax Information Form (customer)3

☐ Michigan-Made Affidavit(s) (if applicable)

Incentives Worksheets

☐ Lighting7

☐ HVAC – Electric10

☐ Miscellaneous Electric17

☐ Process Electric18

☐ Food Service – Electric20

☐ HVAC – Gas22

☐ Hot Water & Laundry23

☐ Insulation24

☐ Process Gas24

☐ Boiler/Furnace Tune-up25

☐ Food Service – Gas26

☐ Custom29

☐ Boiler/Furnace Tune-up Addendum32

Reservation Application Date _____

Expected Completion Date** _____

Final Application
Fill out this side when project is completed

Required Attachments

☐ Customer Information3

☐ Contractor Information4

☐ W9 Tax Information Form (if different than customer)4

☐ 3rd Party Payment Authorization*4

☐ Signed Final Application Agreement5

☐ Manufacturers' Specifications

☐ Itemized Invoices

☐ Michigan-Made Affidavit(s) (if applicable)

Incentives Worksheets

☐ Lighting7

☐ HVAC – Electric10

☐ Miscellaneous Electric17

☐ Process Electric18

☐ Food Service – Electric20

☐ HVAC – Gas22

☐ Hot Water & Laundry23

☐ Insulation24

☐ Process Gas24

☐ Boiler/Furnace Tune-up25

☐ Food Service – Gas26

☐ Custom29

☐ Boiler/Furnace Tune-up Addendum32

* If applicable.

Final Application Date _____

Actual Completion Date*** _____

**Project funds will only be reserved for 90 days from date of Reservation and no Reservation will extend beyond Nov. 30, 2015.

***Application must be submitted within 60 days of completion date or by Nov. 30, 2015, whichever comes first.

This interactive Application will automatically calculate all incentive totals on each worksheet – which you can then submit electronically to our office. You also can download this Application, print it out and complete it manually. You then can either mail or fax it to our office.

You must complete all applicable pages before sending or submitting this Application to our office.

Go To Page 36 For Submission Instructions

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2015 Program Application



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Checklist

Use these two columns to ensure you complete all relevant portions of both the Reservation* and Final Application

Complete this side to **reserve funds before starting your project**

Complete this side to **request payment once your project is completed**

Reservation Application

Fill out this side when reserving incentives

Required Attachment

- ☐ Customer Information3
- ☐ Contractor Information4
- ☐ W9 Tax Information Form (customer)3
- ☐ Michigan-Made Affidavit(s) (if applicable)

Incentives Worksheets

- ☐ Lighting7
- ☐ HVAC – Electric10
- ☐ Miscellaneous Electric17
- ☐ Process Electric18
- ☐ Food Service – Electric20
- ☐ HVAC – Gas22
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- ☐ Process Gas24
- ☐ Boiler/Furnace Tune-up25
- ☐ Food Service – Gas26
- ☐ Custom29
- ☐ Boiler/Furnace Tune-up Addendum32

Final Application

Fill out this side when project is completed

Required Attachments

- ☐ Customer Information3
- ☐ Contractor Information4
- ☐ W9 Tax Information Form (if different than customer) .4
- ☐ 3rd Party Payment Authorization*4
- ☐ Signed Final Application Agreement5
- ☐ Manufacturers' Specifications
- ☐ Itemized Invoices
- ☐ Michigan-Made Affidavit(s) (if applicable)

Incentives Worksheets

- ☐ Lighting7
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- ☐ Boiler/Furnace Tune-up25
- ☐ Food Service – Gas26
- ☐ Custom29
- ☐ Boiler/Furnace Tune-up Addendum32

* If applicable.

2015 Program Application



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Customer/Project Information

Use this sheet to enter all detailed customer, contact and general project information

Customer Information			
Primary Building Type (please select one)		Primary Industry (if not defined by building type)	
<input type="checkbox"/> Assembly	<input type="checkbox"/> Fast Food Restaurant	<input type="checkbox"/> Light Industry	<input type="checkbox"/> Agriculture
<input type="checkbox"/> Small Retail	<input type="checkbox"/> Full Service Restaurant	<input type="checkbox"/> Heavy Industry	<input type="checkbox"/> Petro R/P
<input type="checkbox"/> Big Box Retail	<input type="checkbox"/> Hospital	<input type="checkbox"/> Warehouse	<input type="checkbox"/> Steel Primary Metals
<input type="checkbox"/> School (K-12)	<input type="checkbox"/> Hotel	<input type="checkbox"/> Miscellaneous	<input type="checkbox"/> Mining/Construction
<input type="checkbox"/> College/University	<input type="checkbox"/> Small Office		<input type="checkbox"/> Trans./Comm./Utility
<input type="checkbox"/> Grocery	<input type="checkbox"/> Large Office		<input type="checkbox"/> Auto
			<input type="checkbox"/> Government
			<input type="checkbox"/> Real Estate
			<input type="checkbox"/> Services
			<input type="checkbox"/> Wholesale
This Program is not available to DTE Energy business customers in multifamily buildings consisting of five or more units per building. These customers may be eligible to participate in the Multifamily Program for energy saving upgrades to both tenant and common areas.			
Name of Applicant's Business		Project or Building Name (If Applicable)	
Natural Gas Provider	<input type="checkbox"/> DTE Energy	<input type="checkbox"/> Consumers Energy	<input type="checkbox"/> Other _____
Electricity Provider	<input type="checkbox"/> DTE Energy	<input type="checkbox"/> Consumers Energy	<input type="checkbox"/> Other _____
DTE Energy Gas Account Number (at Project location)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		
DTE Energy Electric Account Number (at Project location)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		
Name as it appears on DTE Energy bill			
Name of Contact Person		Title of Contact Person	
Contact Phone #		Contact Fax #	
Contact Email Address			
Mailing Address		City	State ZIP
Installation Address		City	State ZIP
Customer Tax Information (as entered on W9)			
Tax Status: <input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Corporation (Inc., PC, Etc.) <input type="checkbox"/> Tax-Exempt <input type="checkbox"/> Partnership <input type="checkbox"/> Individual <input type="checkbox"/> Other (may receive 1099)			
Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:			
EIN/Federal Tax ID		OR	Social Security Number
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
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2015 Program Application



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Customer Information					
Primary Building Type (please select one)			Primary Industry (if not defined by building type)		
<input type="checkbox"/> Assembly	<input type="checkbox"/> Fast Food Restaurant	<input type="checkbox"/> Light Industry	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Auto	
<input type="checkbox"/> Small Retail	<input type="checkbox"/> Full Service Restaurant	<input type="checkbox"/> Heavy Industry	<input type="checkbox"/> Petro R/P	<input type="checkbox"/> Government	
<input type="checkbox"/> Big Box Retail	<input type="checkbox"/> Hospital	<input type="checkbox"/> Warehouse	<input type="checkbox"/> Steel Primary Metals	<input type="checkbox"/> Real Estate	
<input type="checkbox"/> School (K-12)	<input type="checkbox"/> Hotel	<input type="checkbox"/> Miscellaneous	<input type="checkbox"/> Mining/Construction	<input type="checkbox"/> Services	
<input type="checkbox"/> College/University	<input type="checkbox"/> Small Office		<input type="checkbox"/> Trans./Comm./Utility	<input type="checkbox"/> Wholesale	
<input type="checkbox"/> Grocery	<input type="checkbox"/> Large Office				



Customer/Project Information

Fill out the project
information completely.

2015 Program Application



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**Customer/
Project
Information**
Fill out the
customer
information
completely.

Name of Applicant's Business				Project or Building Name (If Applicable)																			
Natural Gas Provider	<input type="checkbox"/> DTE Energy	<input type="checkbox"/> Consumers Energy	<input type="checkbox"/> Other _____																				
Electricity Provider	<input type="checkbox"/> DTE Energy	<input type="checkbox"/> Consumers Energy	<input type="checkbox"/> Other _____																				
DTE Energy Gas Account Number (at Project location)	<table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																						
DTE Energy Electric Account Number (at Project location)	<table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																						
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Name of Contact Person		Title of Contact Person																					
Contact Phone #		Contact Fax #																					
Contact Email Address																							
Mailing Address		City	State ZIP																				
Installation Address		City	State ZIP																				
Customer Tax Information (as entered on W9)																							
Tax Status: <input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Corporation (Inc., PC, Etc.) <input type="checkbox"/> Tax-Exempt <input type="checkbox"/> Partnership <input type="checkbox"/> Individual <input type="checkbox"/> Other (may receive 1099)																							
Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:																							
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		-			-																		

2015 Program Application



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Contractor/Third-Party Information/Authorization

Fill out the contractor information completely.

Application

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Incentive Application (continued)

Primary Contractor/Distributor Information

Name of Company	Trade Ally #		
Name of Contact Person	Title of Contact Person		
Contact Phone #	Contact Fax #		
Contact Email Address			
Mailing Address	City	State	ZIP

Optional Third Party Payment Authorization

IMPORTANT NOTES:

1. Complete the section below ONLY if the incentive payment is to be paid to a SINGLE entity other than the DTE Account Holder.
2. Do NOT use the section below, if payments are to be made to MORE than a single third-party.
3. For payments being made to **two or more third parties**, please check this box ☐ , request a copy of the Third Party Addendum, have it signed by the DTE Account Holder and attach it to this Final Application.

I am authorizing the payment of the incentive to the third party named below and I understand that I will not be receiving the incentive payment. I also understand that my release of the payment to a third party does not exempt me from the Program requirements outlined in the Measure Specifications, Final Application Agreement and Policies and Procedures Manual.

Authorized by: _____

DTE Account Holder Signature	Date
------------------------------	------

Check should be made payable to:

Payee: Company/Individual Name _____

Mailing Address _____

City _____ State _____ ZIP _____

Contact Phone Number _____

Payee Tax Information (as entered on W9)

Tax Status: ☐ Limited Liability Company ☐ Corporation (Inc., PC, Etc.) ☐ Tax-Exempt ☐ Partnership ☐ Individual ☐ Other (may receive 1099)

Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:

EIN/Federal Tax ID	OR	Social Security Number																				
<table><tr><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>			-									<table><tr><td></td><td></td><td>-</td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td></tr></table>			-			-				
		-																				
		-			-																	

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Contractor Information

Application	Incentive Application (continued)			
	Primary Contractor/Distributor Information			
	Name of Company		Trade Ally #	
	Name of Contact Person		Title of Contact Person	
	Contact Phone #		Contact Fax #	
	Contact Email Address			
Mailing Address		City	State	ZIP

Fill out the contractor information completely.

If no contractor was involved, enter "self-installed."

2015 Program Application



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Third-Party Authorization

Complete this section upon submission of Final Application ONLY if payment is to go to someone other than the customer.

Optional Third Party Payment Authorization		
IMPORTANT NOTES:		
1. Complete the section below ONLY if the incentive payment is to be paid to a SINGLE entity other than the DTE Account Holder.		
2. Do NOT use the section below, if payments are to be made to MORE than a single third-party.		
3. For payments being made to two or more third parties , please check this box <input type="checkbox"/> , request a copy of the Third Party Addendum, have it signed by the DTE Account Holder and attach it to this Final Application.		
I am authorizing the payment of the incentive to the third party named below and I understand that I will not be receiving the incentive payment. I also understand that my release of the payment to a third party does not exempt me from the Program requirements outlined in the Measure Specifications, Final Application Agreement and Policies and Procedures Manual.		
Authorized by: _____		
DTE Account Holder Signature _____		Date _____
Click/Worded for make payable to:		
Payee: Company/Individual Name _____		
Mailing Address _____		
City _____	State _____	ZIP _____
Contact Phone Number _____		
Payee Tax Information (as indicated on W9)		
Tax Status: <input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Corporation (Inc., PC, Etc.) <input type="checkbox"/> Tax-Exempt <input type="checkbox"/> Partnership <input type="checkbox"/> Individual <input type="checkbox"/> Other (may receive 1099)		
Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:		
EIN/Federal Tax ID [][]-[][][][][][][][][]	OR	Social Security Number [][][]-[][][]-[][][][][][][][]

2015 Program Application



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New for 2015: Multiple Third-Parties

If there are multiple contractors working on the same project – particularly on Multi-Measure projects – the customer may authorize payments to any or all of them.

If so, you *must* use the **Multiple Payment Addendum**.

This form is available for download at dtetradeally.com

Multiple Payment Addendum

This addendum is to be used **ONLY** if two or more parties are being approved for payment of incentives on the attached Final Application. This form must be signed by the DTE Account Holder, and all values must be completed before submitted. Any incomplete values will delay processing of this Application for payment. **NOTE:** If the Customer/Account Holder is to receive a portion of the project payment, s/he should be listed as Payee 1.

I am authorizing the payment of the incentives in the attached Final Application to the third parties named on this form, and I understand that I will not be receiving the incentive payment. I also understand that my release of payment to these third parties do not exempt me from the Program requirements outlined in the Measure Specifications, Final Application Agreement and Policies and Procedures Manual.

Name of Applicant's Business _____ Application Number (if known) _____

Authorized by: _____

DTE Account Holder Signature: _____ Date: _____

Check should be made payable to:

Payee 1: Company/Individual Portion of project: \$ _____
Percentage of project: _____%

Mailing Address _____

City _____ State _____ ZIP _____

Contact Phone Number _____

Payee Tax Information (as entered on W9)

Tax Status: ☐ Limited Liability Company ☐ Corporation (Inc., PC, Etc.) ☐ Tax-Exempt ☐ Partnership ☐ Individual ☐ Other (may receive 1099)

Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:

EIN/Federal Tax ID: [][]-[][]-[][][][][][][][] OR Social Security Number: [][]-[][]-[][][][][][][][]

Payee 2: Company/Individual Portion of project: \$ _____
Percentage of project: _____%

Mailing Address _____

City _____ State _____ ZIP _____

Contact Phone Number _____

Payee Tax Information (as entered on W9)

Tax Status: ☐ Limited Liability Company ☐ Corporation (Inc., PC, Etc.) ☐ Tax-Exempt ☐ Partnership ☐ Individual ☐ Other (may receive 1099)

Tax ID Number: Depending on tax status please provide EITHER your EIN/Federal Tax ID or Social Security Number below:

EIN/Federal Tax ID: [][]-[][]-[][][][][][][][] OR Social Security Number: [][]-[][]-[][][][][][][][]

Add more payees on reverse side.

2015 Custom Application



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About Custom Applications

There is an instruction page for custom projects that outlines the general process and calculations involved in submitting a custom application.

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets, and other documents related to this measure and submitted with this Application.

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Custom Measures Worksheet Instructions

Use this information to help you complete your Custom Incentive Worksheet on the following page(s).

- For each individual type of equipment, use a separate "Item" box. For example: Do not combine different types of lighting under one item.
- If you have a lighting project: Before you begin the Custom portion of your Application, use our "Prescriptive or Custom?" worksheet (Page 26) to determine whether your project qualifies for a custom Application or should be submitted as a Prescriptive measure. Also, contact us if you have questions about how to calculate your "Before" and "After" retrofit operating hours; or how to calculate your gas savings, which must be entered manually on the custom page (in the electronic version, the Application will calculate electric savings).
- Under Before Retrofit and After Retrofit: Be as specific as possible with your description and quantities. This includes, but is not limited to: quantity, name, manufacturer, model number, size (ex: hp or kW or Btu/hr) for the existing and new equipment, as well as any other information that can help calculate the energy used by the equipment. **Write the "Reference Number" for each item on all specification sheets and invoices related to that specific item and attach to your Final Application.**
- Under "Hours of Operation" for both "Before" and "After" retrofit, provide a documented method for arriving at these figures. Submit your method of calculation with this Application.
- Insert the KW for the equipment for both "Before" and "After" retrofit.
- Under Your **Current Energy Cost** (\$ per unit), enter your average costs for the energy source – electricity, natural gas or both – that your measure will be saving. To determine your current annual cost for each energy source, use the formulae at right.
NOTE: Your natural gas bill is calculated in units of Ccf and must be converted to Mcf. The conversion formula is 10 Ccf = 1 Mcf and has been incorporated into the above equation for you.

Your Current Electricity Costs	$\frac{\text{Sum of 12 consecutive monthly utility bills for electricity (\$)}}{\text{Sum of electricity units during the same 12 consecutive months as above (kWh)}}$
Your Current Natural Gas Costs	$\frac{\text{Sum of 12 consecutive monthly utility bills for natural gas (\$)}}{\text{Sum of natural gas units during the same 12 consecutive months as above (Ccf) \times 10 (Mcf)}}$

- Next, separately calculate your **Annual Electric Savings** by using the following process: If you are using the electronic version, this will be calculated for you:
a) Enter the "Before" hours
b) Enter the "Before" KW
c) Multiply A x B
d) do the same for "After"
e) Subtract the new from the old.
This is the **Annual Electric Savings** to be entered on the form. For complex projects, provide a separate analysis showing how you determined the energy savings or contact us for assistance.
- Next, separately calculate your **Annual Natural Gas Savings** by Mcf (if applicable). Methods for calculating natural gas savings may vary. If possible, use the following process:
a) Show the Mcf used by the existing piece of equipment by providing 12 months of natural gas bills, metered data or a calculation, then:
b) Provide a calculation of the expected Mcf of the new equipment, then
c) Subtract the new from the old.
This is the **Annual Natural Gas Savings** to be entered on the form.
- If you're using the interactive version of this Application, the **Calculated Incentive** will be entered for you. If you are using a paper version, determine your **Calculated Incentive** for each measure by multiplying the **Annual Electric Savings** by \$0.07/kWh and the **Annual Natural Gas Savings** by \$4.00/Mcf.
- Next, enter the **Measure Cost**. This is the cost of implementing a measure **less** any costs incurred to achieve non-energy related project benefits. Only costs associated with the rebated energy savings measure should be included in the **Measure Cost** (this cannot include internal labor cost), which is the basis for determining the simple payback period for custom measures, and is defined as either:
a) **For end-of-life equipment replacement measures:** the cost difference between equipment meeting Program efficiency criteria and equipment meeting the minimum efficiency allowable by code or industry standard; or
b) **For retrofit, early replacement and new technology measures:** the cost of new equipment, components or materials added to existing equipment for the purpose of improving its energy efficiency.
- If you're using the interactive version of this Application, the **Simple Payback Period** for each fuel type will be entered for you. If you are using a paper version, use the formulae shown on the worksheet pages to determine the payback by fuel type.

Simple Payback Period	$\frac{\text{Measure Cost}}{(\text{Annual kWh Saved} \times \text{Electricity Cost}) + (\text{Annual Mcf Saved} \times \text{Natural Gas Cost})}$
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- If you're using the interactive version of this Application, the **Total Calculated Incentives** at the bottom of the form will be entered for you. If you're using the paper version, first **total** the **Measure Cost** for all measures and enter that value in **Aggregate Measures Cost**. Then **total** all the individual measure **Calculated Incentives** and enter that in **Total Calculated Incentives**.
- Total Awarded Incentives are calculated at no more than 50% of the respective Measure Costs for electric and gas items.

IMPORTANT: Check the appropriate **Category** box (Lighting, HVAC-Gas, Process-Electric, etc.) for each item you list on the Custom worksheets.

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About Custom Applications

There is a special lighting calculator to help determine whether your lighting project should be prescriptive or custom.

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to that measure and submitted with this Application.

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Prescriptive or Custom Incentive Worksheet

Prescriptive or Custom?

Where does your lighting project fall?

Does your lighting project call for a Custom calculation — or does it fall within our Prescriptive measures?

To answer that question, follow these instructions:

Step 1:
Do the type of fixtures in your project match a Prescriptive measure in our Application?

☐ **No:** Submit it as a Custom measure ☐ **Yes:** Continue to Step 2.

Step 2:

- a. Enter your fixture "Before Retrofit" quantity (the existing condition) in the box below.
- b. Enter your fixture "After Retrofit" quantity (the new condition) in the box below.
- c. Follow the instructions in the orange box.

Enter "Before Retrofit" fixture quantity:

Enter "After Retrofit" fixture quantity:

Follow these instructions:

Custom

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Custom Project Lighting Calculator



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This calculator will answer your question when it comes to lighting projects that are **NOT** one-for-one retrofits.

Prescriptive or Custom Incentive Worksheet

Prescriptive or Custom?

Where does your lighting project fall?

Does your lighting project call for a Custom calculation — or does it fall within our Prescriptive measures?

To answer that question, follow these instructions:

Step 1:

Do the type of fixtures in your project match a Prescriptive measure in our Application?

☐ **No:** Submit it as a Custom measure

☐ **Yes:** Continue to Step 2.

Step 2:

- Enter your fixture "Before Retrofit" quantity (the existing condition) in the box below.
- Enter your fixture "After Retrofit" quantity (the new condition) in the box below.
- Follow the instructions in the orange box.

Enter "Before Retrofit" fixture quantity:

Enter "After Retrofit" fixture quantity:

Follow these instructions:

2015 Custom Application



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About Custom Applications

There are three custom pages in the Application.

Each can accept two custom item entries.

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to this measure and submitted with this Application.

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Custom Incentive Worksheet

IMPORTANT: If you fail to complete each section, check the appropriate category or enter all required information, the worksheet will not calculate your incentive and carry the value to Page 6.

Must be submitted BEFORE project begins.

See Instructions on Page 27. Complete every blank box for each item you submit.
Please attach all equipment specifications to your Reservation Application before you submit for review.

Ref# 29-1 Location (building name, etc.) _____

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week	Weeks/year	Non-work days/year		Hours/week	Weeks/year	Non-work days/year	
Hours used per year (a)		KW (b)		Hours used per year (c)		KW (d)	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Ref# 29-2 Location (building name, etc.) _____

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week	Weeks/year	Non-work days/year		Hours/week	Weeks/year	Non-work days/year	
Hours used per year (a)		KW (b)		Hours used per year (c)		KW (d)	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Electric Simple Payback Period must be ≥ 1 to ≤ 8 years = $\frac{\text{Electric Aggregate Measure Cost}}{\text{Aggregate Annual kWh Saved} \times \text{Current Energy Cost}}$

Gas Simple Payback Period must be ≥ 1 year = $\frac{\text{Gas Aggregate Measure Cost}}{\text{Aggregate Annual Mcf Saved} \times \text{Current Energy Cost}}$

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)						
Electric						
Natural Gas						
Total Measure Cost					Total Custom Incentive	

IMPORTANT NOTES:

* The Simple Payback Period must fall within the electric or gas parameters to qualify for an incentive (see formula above). If the Total Awarded Incentive for either electric or gas displays DNQ (does not qualify), then the payback period fell outside of required parameters or the measure cost or energy savings were missing.

** Total Awarded Incentives for each utility are capped at no more than 50% of the Total Measure Cost. If one utility does not qualify for an incentive, the other utility is capped at no more than 50% of the Aggregate Measure Cost for that utility.

If you require assistance completing this section, contact our office.

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About Custom Incentives

	Electric	Gas
Incentive Rate	\$0.07/kWh	\$4/Mcf
Maximum incentive	50% of measure cost	50% of measure cost
Simple Payback Period	≥ 1 year to ≤ 8 years	≥ 1 year (no upper limit)

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For Custom projects:

You must enter:

- A** – Location: building name, etc.
- B** - Hours: before & after (including your method of calculation)
- C** - kW (before and after)
- D** - Current Energy Costs
- E** - Times of operation
- F** - Measure Costs

The interactive PDF will:

- Calculate each item's incentive – and total those numbers at the bottom.
- Automatically account for payback requirements (electric and gas) and the 50% capping limit.

*Refer to the instruction sheet
if you're doing your calculations manually.*

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to this measure and submitted with this Application.

Custom Incentive Worksheet

IMPORTANT: In each section, check the appropriate category or enter all required information. If you do not check a category, we will not calculate your incentive and carry the value to Page 5.

Must be submitted with Application

See Instructions on Page 27. Complete every blank box for each item you submit. Please attach all specifications to your Reservation Application before you submit for review.

Ref# 29-1 Location (building name, etc.)

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (a):		kW (b):		Hours used per year (c):		kW (d):	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Ref# 29-2 Location (building name, etc.)

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (a):		kW (b):		Hours used per year (c):		kW (d):	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Simple Payback Period: (Aggregate Annual kWh Saved x Current Energy Cost) / (Aggregate Annual Measure Cost)

Gas Simple Payback Period: (Aggregate Annual Mcf Saved x Current Energy Cost) / (Aggregate Annual Measure Cost)

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (includes values entered on pages 29-31)	Electric					
	Natural Gas					
Total Measure Cost					Total Custom Incentive	

IMPORTANT NOTES:

* The Simple Payback Period must fall within the electric or gas parameters to qualify for an incentive (see formula above). If the Total Awarded Incentive for either electric or gas displays DNE (does not qualify), then the payback period fell outside of required parameters or the measure cost(s) or energy savings were missing.

** Total Awarded Incentives for each utility are capped at no more than 50% of the Total Measure Cost. If one utility does not qualify for an incentive, the other utility is capped at no more than 50% of the Aggregate Measure Cost for that utility.

If you require assistance completing this section, contact our office.

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Ref# 29-1 Location (building name, etc.) _____

Description											
Before Retrofit						After Retrofit					
"Before" hours of operation calculation for this specific equipment						"After" hours of operation calculation for this specific equipment					
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)		

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

Be as complete as possible when describing your custom measures and calculating your estimated savings.

The interactive PDF file will automatically calculate your anticipated incentives.
In the print version, you must enter these calculations manually.

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The interactive PDF will:

- Automatically calculate each item's incentive – and total those numbers at the bottom.
- Automatically account for payback requirements (electric and gas) and the 50% capping limit.

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to this measure and submitted with this Application.

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Custom Incentive Worksheet

IMPORTANT: If you fail to complete each section, check the appropriate category or enter all required information, the worksheet will not calculate your incentive and carry the value to Page 5.

Must be submitted BEFORE project begins.

See Instructions on Page 27. Complete every blank box for each item you submit. Please attach all equipment specifications to your Reservation Application before you submit for review.

Ref# 29-1 Location (building name, etc.)

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (a)		kW (b)		Hours used per year (c)		kW (d)	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3-5 p.m. on Monday-Thursday in the month of July?
☐ Yes ☐ No

Capped Measure Incentive (from Total Awarded Incentive below)

Ref# 29-2 Location (building name, etc.)

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (a)		kW (b)		Hours used per year (c)		kW (d)	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3-5 p.m. on Monday-Thursday in the month of July?
☐ Yes ☐ No

Capped Measure Incentive (from Total Awarded Incentive below)

Electric Simple Payback Period: must be > 1 to < 58 years
Electric Aggregate Measure Cost: Aggregate Annual kWh Saved x Current Energy Cost
Gas Simple Payback Period: must be > 1 year
Gas Aggregate Measure Cost: Aggregate Annual Mcf Saved x Current Energy Cost

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric					
	Natural Gas					
Total Measure Cost					Total Custom Incentive	

IMPORTANT NOTES:
* The Simple Payback Period must fall within the electric or gas parameters to qualify for an incentive (see formula above). If the Total Awarded Incentive for either electric or gas displays DND (does not qualify), then the payback period fell outside of required parameters or the measure cost/or energy savings were missing.
** Total Awarded Incentives for each utility are capped at no more than 50% of the Total Measure Cost. If one utility does not qualify for an incentive, the other utility is capped at no more than 50% of the Aggregate Measure Cost for that utility.
If you require assistance completing this section, contact our office.

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2015 Custom Application



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The interactive PDF will:

- Automatically allocate the incentives proportionally to each eligible item for **Multi-Measure** bonus calculations on Page 6 (you **must** check the category, such as “Lighting”).

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to this measure and submitted with this Application.

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Custom Incentive Worksheet

IMPORTANT: If you fail to complete each section, check the appropriate category or enter all required information, the worksheet will not calculate your incentive and carry the value to Page 6.

Must be submitted BEFORE project begins.

See Instructions on Page 27. Complete every blank box for each item you submit. Please attach all equipment specifications to your Reservation Application before you submit for review.

Ref# 29-1 Location (building name, etc.) _____

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (A):		KW (B):		Hours used per year (C):		KW (D):	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Ref# 29-2 Location (building name, etc.) _____

Before Retrofit				After Retrofit			
Description				Description			
"Before" hours of operation calculation for this specific equipment:				"After" hours of operation calculation for this specific equipment:			
Hours/week:	Weeks/year:	Non-work days/year:		Hours/week:	Weeks/year:	Non-work days/year:	
Hours used per year (A):		KW (B):		Hours used per year (C):		KW (D):	
Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost	
Electric	kWh			\$0.07			
Natural Gas	Mcf			\$4.00			

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Electric Simple Payback Period = $\frac{\text{Electric Aggregate Measure Cost}}{\text{Aggregate Annual kWh Saved} \times \text{Current Energy Cost}}$ must be ≥ 1 to ≤ 8 years

Gas Simple Payback Period = $\frac{\text{Gas Aggregate Measure Cost}}{\text{Aggregate Annual Mcf Saved} \times \text{Current Energy Cost}}$ must be ≥ 1 year

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric					
	Natural Gas					
Total Measure Cost					Total Custom Incentive	

IMPORTANT NOTES:

* The Simple Payback Period must fall within the electric or gas parameters to qualify for an incentive (see formula above). If the Total Awarded Incentive for either electric or gas displays DND (does not qualify), then the payback period fell outside of required parameters or the measure cost(s) or energy savings were missing.

** Total Awarded Incentives for each utility are capped at no more than 50% of the Total Measure Cost. If one utility does not qualify for an incentive, the other utility is capped at no more than 50% of the Aggregate Measure Cost for that utility.

If you require assistance completing this section, contact our office.

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Ref# 29-1

Location (building name, etc.) _____

Description											
Before Retrofit						After Retrofit					
"Before" hours of operation calculation for this specific equipment						"After" hours of operation calculation for this specific equipment					
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)		
Service	Unit	Current Energy Cost (\$ per Unit)		Annual Savings* (Units/Year) (A)		Incentive Rate (\$ per Unit) (B)		Calculated Incentive (A x B)		Measure Cost	
Electric	kWh					\$0.07					
Natural Gas	Mcf					\$4.00					

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

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In the interactive PDF:

- By checking the **category** for each custom item, the proportional incentives will be automatically entered into the Page 6 summary for the **Multi-Measure** bonus calculations.

In the print version, you must enter these calculations manually.



For Custom projects:

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric						
	Natural Gas						
Total Measure Cost						Total Custom Incentive	

The **interactive PDF** file will *automatically*:

- Populate the Aggregate Measure Costs, Aggregate Annual Savings, then
- Calculate the Simple Payback Period for electric and gas, based on Program requirements and then
- Calculate your Total Calculated Incentive and then determine your Total Awarded Incentive, based on Program Caps.

In the print version, you must perform all calculations and enter them manually.



For Custom projects:

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$30,000	311,800	\$0.10	.96	\$24,944	DNQ
	Natural Gas						
Total Measure Cost						Total Custom Incentive	

If one or the other – or both – of your fuel types do not qualify for an incentive, the letters **DNQ** (*does not qualify*) will appear.

This means either that:

- You failed to complete the worksheet completely *or*
- That the **Simple Payback Period** failed to fall within the electric or gas parameters.

Please recheck your calculations.

NOTE: DNQ will also carry to the Page 6 summary grid.

Completing a Custom Application



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Completing a Custom Application *A detailed review*

Ref# 29-1

Location (building name, etc.) _____

Description											
Before Retrofit						After Retrofit					
"Before" hours of operation calculation for this specific equipment						"After" hours of operation calculation for this specific equipment					
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)		

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the **"After Retrofit"** specific piece of equipment listed here be in operation during the hours of 3-6 p.m. on Monday-Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

--

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.



Custom Form Requirements

- **Location (new):**
 - Identify the project location:
 - Building name, operation, etc.
- **Description:**
 - Before and After Retrofit:
 - Complete Equipment or Process Description
- **Hours used per year:**
 - Before and After retrofit operating hours

Ref# 29-1	Location (building name, etc.)
-----------	--------------------------------

Ref# 29-1	Location (building name, etc.)
Description	
Before Retrofit	

Hours used per year (a)		kW (b)		Hours used per year (c)	
-------------------------	--	--------	--	-------------------------	--



Custom Form Requirements

- **kW:**

- **Before** and **After** retrofit kW for electric

- Take the wattage per item multiplied by the quantity and divide by 1,000.

kW (b)		Hours used per year (c)		kW (d)	
--------	--	-------------------------	--	--------	--

- **Current Energy Cost:**

- \$ per unit of energy

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		



Custom Form Requirements

- **Annual Savings (kWh):**

- Units per year
 - Electric items will calculate usage and savings automatically
 - You must provide calculations for gas

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* ('Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

- **Measure Cost:**

- Do not include labor if self-installed

- **Category:**

- Check the correct category box for each measure classification and to qualify for **Multi-Measure Bonus**

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>



Calculating the Annual Energy Savings

- **Electric Savings (kW)**

$$= \frac{[(Qty_{OLD} \times Watts_{OLD}) - (Qty_{NEW} \times Watts_{NEW})]}{1,000 \text{ Watts/kilowatt}}$$

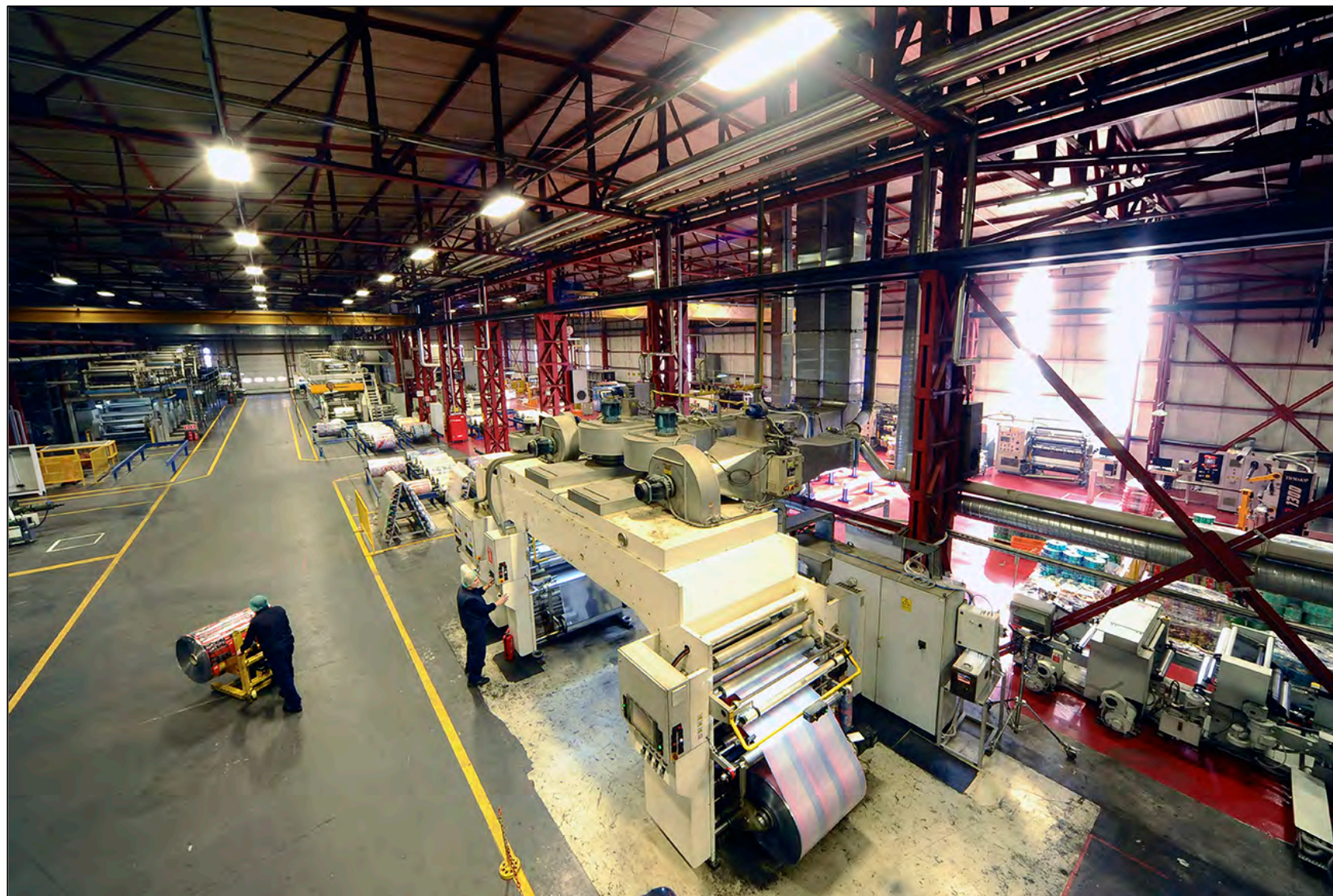
NOTE: To calculate kWh = kW X Annual Operating Hours

- **Gas Savings (Mcf)**

$$= \text{Average Mcf}_{OLD} \times \left(1 - \frac{\text{Efficiency}_{OLD}}{\text{Efficiency}_{NEW}}\right)$$



Custom Lighting Project





Custom Lighting Project

Existing

Metal Halide Fixtures*

Proposed

Fluorescent 3 Lamp T5HO Fixtures

Current Conditions		Proposed Conditions	
Average Energy Cost	\$0.10/kWh		
Fixture Type	400W HID	Fixture Type	3-lamp T5HO
Fixture Quantity	250	Fixture Quantity	200
Watts per Fixture**	455 Watts	Watts per Fixture**	179 Watts
Annual Operating Hours	4000 Hours	Annual Operating Hours	4000 Hours
		Measure Cost	\$40,000

*Metal Halide fixtures are HID fixtures and can be found under the HID category on the Application.

**Includes ballast

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) **Bay 1**

Description										
Before Retrofit					After Retrofit					
Quantity (250) – 400W Metal Halide fixtures, 455W/fixture, High Bay application					Quantity (200) – Fluorescent 3-lamp T5HO fixtures, 179W/fixture, High Bay application					
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment					
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric						
	Natural Gas						
Total Measure Cost					Total Custom Incentive		



Hours Used Per Year

Provide detailed information

4,000 Equipment Hours/Year Total (Before and After Retrofit)

Annual or Seasonal schedule?

Weekly Schedule

Monday – Friday = 8 a.m. – 8 p.m. (12 hours)

Saturday and Sunday = 8 a.m. – 6 p.m. (10 hours)

50 weeks/year (2 weeks removed for holidays)

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description					
Before Retrofit			After Retrofit		
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application			Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application		
"Before" hours of operation calculation for this specific equipment			"After" hours of operation calculation for this specific equipment		
Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)	4,000	kW (b)		Hours used per year (c)	4,000

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric						
	Natural Gas						
Total Measure Cost				Total Custom Incentive			



Calculating kW (electric)

Current Energy Use:

$$\frac{250 \text{ fixtures} \times 455 \text{ watts/fixture}}{1000 \text{ watts/1 kW}}$$

$$= 113.75 \text{ kW}$$

Proposed Energy Use:

$$\frac{200 \text{ fixtures} \times 179 \text{ watts/fixture}}{1000 \text{ watts/1 kW}}$$

$$= 35.80 \text{ kW}$$



Calculating Energy Savings (electric)

$$113.75 \text{ kW} \times 4,000 \text{ (hours)} = 455,000 \text{ kWh}$$

$$35.80 \text{ kW} \times 4,000 \text{ (hours)} = \text{—} 143,200 \text{ kWh}$$

Energy Savings

=

311,800 kWh

Custom Project Lighting Example



DTE Energy
Know Your Own Power®

Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh		311,800	\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)		Electric	311,800				
		Natural Gas					
Total Measure Cost						Total Custom Incentive	



Calculating Current Average Energy Costs

Average Electricity Costs $\left(\frac{\$}{\text{kWh}}\right) =$

$$\frac{\text{Sum of 12 consecutive monthly utility bills for electricity (\$)}}{\text{Sum of electricity used during the same 12 consecutive 12 months as above (kWh)}}$$

Average Natural Gas Costs $\left(\frac{\$}{\text{Mcf}}\right) =$

$$\frac{\text{Sum of 12 consecutive monthly utility bills for natural gas (\$)}}{\text{Sum of natural gas used during the same 12 consecutive 12 months as above (Mcf)}}$$

NOTE: 1 Mcf = 10 Ccf

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10	311,800	\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric		311,800	\$0.10			
	Natural Gas						
Total Measure Cost					Total Custom Incentive		



Selecting a category

- On the custom worksheet, you **must** select the appropriate **category** for each measure.
 - This will ensure that the measure is entered correctly on the summary page (Page 6)

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

The Multi-Measure Bonus

To receive the **20% bonus**, you must submit more than one category of measures on the same Application.*

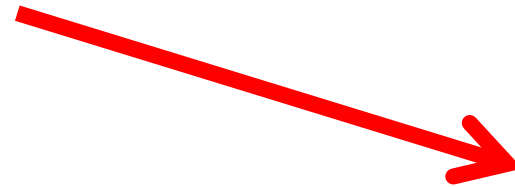
- This can be:
 - Two different electric categories
 - Two different gas categories
 - One electric and one gas category

**To qualify for the Multi-Measure Bonus, no single category can be more than 75% of the total Application value.*



Peak usage

- Answer this energy usage question.



Will the “**After Retrofit**” specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes

☒ No



Calculated Incentive:

$$\begin{array}{r} \text{Annual Energy Savings} \\ \times \quad \text{Incentive Rate} \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{311,800 kWh} \\ \times \quad \$0.07 / \text{kWh} \\ \hline \hline \text{\$21,826} \end{array}$$

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10	311,800	\$0.07	\$21,826	
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)		Electric	311,800	\$0.10		\$21,826	
		Natural Gas					
Total Measure Cost					Total Custom Incentive		



About Measure Cost

- Measure Cost (MC) is the cost of implementing a measure — less any costs incurred to achieve non-energy related project benefits.
- Only costs associated with the incented energy savings measure should be included in the MC.
- The MC is the basis for determining the **simple payback period** for custom measures and is defined as either:
 - For end-of-life equipment replacement measures: the cost differential between equipment meeting Program efficiency criteria and equipment meeting the minimum efficiency allowable by code or industry standard.
 - External labor costs may also be included. Internal labor costs cannot be included.
 - For retrofit, early replacement or new technology measures: the cost of new equipment or components added to existing equipment for the purpose of improving energy efficiency.
 - External labor costs may also be included. Internal labor costs cannot be included.

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description											
Before Retrofit					After Retrofit						
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment						
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)		

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10		\$0.07	\$21,826	\$40,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$40,000	311,800	\$0.10		\$21,826	
	Natural Gas						
Total Measure Cost					Total Custom Incentive		



About Payback

Electric Simple Payback must be ≥ 1 to ≤ 8 years

$$= \frac{\text{Electric Aggregate Measure Cost}}{\text{Aggregate Annual kWh Saved} \times \text{Current Energy Cost}}$$

$$\frac{\$40,000}{311,800 \times \$0.10} = 1.28 \text{ years}$$

Custom Project Lighting Example



DTE Energy
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Completing the Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description											
Before Retrofit					After Retrofit						
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment						
Hours/week		Weeks/year		Non-work days/year		Hours/week		Weeks/year		Non-work days/year	
Hours used per year (a)			kW (b)			Hours used per year (c)			kW (d)		

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10		\$0.07	\$21,826	\$40,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$40,000	311,800	\$0.10	1.28	\$21,826	
	Natural Gas						
Total Measure Cost					Total Custom Incentive		



Actual Incentive:

Incentives are capped at 50% of Measure Cost

	Measure Cost
X	50%
<hr/>	

	\$40,000
X	.5
<hr/>	
\$20,000	

Custom Project Lighting Example



DTE Energy
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Completed Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10	311,800	\$0.07	\$21,826	\$40,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

\$20,000

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$40,000	311,800	\$0.10	1.28	\$21,826	\$20,000
	Natural Gas						
Total Measure Cost						Total Custom Incentive	\$20,000



What else you need to complete your Custom Application

Not sufficient!

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Custom Project Lighting Example



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Manufacturer Specifications Lamps

www.sylvania.com

PENTRON® SEAMLESS and PENTRON HO SEAMLESS T5 and T5HO Linear Fluorescent Lamps



Key Features & Benefits

- Novel base design offers continuous lighting without shadows
- Dimmable
- Allows for sleek, compact luminaire designs
- 20,000 hour average rated life
- 93% mean lumens
- 3000K, 4000K
- 85 CRI
- Compatible with T5 and T5HO ballasts
- QUICK 60+® System Warranty when paired with QUICKTRONIC ballasts



Ref #29-1

Product Offering

Lamp Type	Watts	CCT
FP24/800/HO/SLS	24	3000K, 4000K
FP39/800/HO/SLS	39	3000K, 4000K
FP54/800/HO/SLS	54	3000K, 4000K
FP14/800/SLS	14	3000K, 4000K
FP21/800/SLS	21	3000K, 4000K
FP28/800/SLS	28	3000K, 4000K

Application Information

Applications

Application Notes

- Miniature bi-pin bases cannot be installed into T8 and T12 sockets.
- Miniature bi-pin bases require UL Listed 600 volt rated sockets.
- PENTRON lamps require programmed rapid start electronic ballasts for T5 lamps, equipped with end-of-lamp-life sensing circuit.
- Dedicated lamp holder 1282-SLS/FAU manufactured by A.A.G Stucchi. Visit A.A.G Stucchi web site for socket information. www.aagstucchi.it/en/prodotti/productsMain.aspx

Use the Reference Numbers assigned to each measure in the App

Ordering Information

Item Number	Ordering Abbreviation	Watts	Base	Average Rated Life (3 hrs/st)	Initial Lumens @35°C	Mean Lumens @35°C	Initial Lumens @25°C	Mean Lumens @25°C	CCT	CRI
PENTRON HO SEAMLESS										
20182	FP24/830/HO/SLS	24	Mini BiPin	20,000	1,750	1,630	1,550	1,440	3000K	85
20183	FP24/840/HO/SLS	24	Mini BiPin	20,000	1,750	1,630	1,550	1,440	4000K	85
20184	FP39/830/HO/SLS	39	Mini BiPin	20,000	3,100	2,885	2,745	2,555	3000K	85
20185	FP39/840/HO/SLS	39	Mini BiPin	20,000	3,100	2,885	2,745	2,555	4000K	85
20186	FP54/830/HO/SLS	54	Mini BiPin	20,000	4,450	4,140	3,940	3,665	3000K	85
20187	FP54/840/HO/SLS	54	Mini BiPin	20,000	4,450	4,140	3,940	3,665	4000K	85
PENTRON SEAMLESS										
20098	FP14/830/SLS	14	Mini BiPin	20,000	1,200	1,115	1,060	985	3000K	85
20099	FP14/840/SLS	14	Mini BiPin	20,000	1,200	1,115	1,060	985	4000K	85
20100	FP21/830/SLS	21	Mini BiPin	20,000	1,900	1,765	1,680	1,560	3000K	85
20101	FP21/840/SLS	21	Mini BiPin	20,000	1,900	1,765	1,680	1,560	4000K	85
20102	FP28/830/SLS	28	Mini BiPin	20,000	2,600	2,420	2,300	2,140	3000K	85
20103	FP28/840/SLS	28	Mini BiPin	20,000	2,600	2,420	2,300	2,140	4000K	85

Sufficient!

FL093R1 12/11

SEE THE WORLD IN A NEW LIGHT



				ICN-2S54-90C-SC						B	
	347-480			HCN-2S54-90C-WL	120-119	1.00	10	0.35-0.25		L	74
3	120-277	PS	Centium	ICN-4S54-90C-2LS	182-179	1.00	10	1.52-0.66	-20/-29	G	75A
				ICN-4S54-90C-2LS-G							
	347-480			HCN-4S54-90C-2LS-G	188-186	1.04	10	0.54-0.39			75
4	120-277	PS	Centium	ICN-4S54-90C-2LS	240-234	1.00	10	2.00-0.86	-20/-29	G	75
				ICN-4S54-90C-2LS-G							

Custom Project Lighting Example



DTE Energy
Know Your Own Power®

Itemized Invoices

ENERGY SAVERS

We Help You Save

P O Box 0000
Detroit, MI 48000
Phone (313) 123-0000 Fax (313) 123-0000

QUANTITY	DESCRIPTION	AMOUNT
	Custom Lighting project with 200 fixtures	\$ 40,000.00
TOTAL		\$ 40,000.00

Bad...

...Good!

ENERGY SAVERS

We Help You Save

P O Box 0000
Detroit, MI 48000
Phone (313) 123-0000 Fax (313) 123-0000

DATE: February 15, 2010
QUOTE # 100

Bill To: JANE ENERGY
West End Productions
0000 Grand River Avenue
Detroit, MI 48000
313-123-4567

Ship To: SAME

Comments or Special Instructions:

SALESPERSON	P.O. NUMBER	SHIP DATE	SHIP VIA	F.O.B. POINT	TERMS
PETER SAVER	WE-00501	7/31/2013	BEST WAY	FACTORY	NET 30

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
200	T5HO 3-LAMP, 4' fixtures with electronic ballasts	\$ 80.00	\$ 16,000.00
	85 CRI/FP54/800/HO/SLS - 4000K		
	Ballast - ICN-4S54-90C-2LS-G		
LOT	LABOR TO INSTALL	23,040.00	\$23,040.00

Ref #29-1

SUBTOTAL	\$ 39,040.00
TAX RATE	6.00%
SALES TAX	960.00
SHIPPING & HANDLING	
TOTAL	\$ 40,000.00

Make all checks payable to **ENERGY SAVERS**
If you have any questions concerning this invoice, contact Peter Saver @ 313-555-0000

THANK YOU FOR YOUR BUSINESS!



Itemized Invoices

If you have:

- Multiple pieces of different equipment on the same invoice...

or

- Multiple project sites included in a single invoice...

You must provide a summary that explains the distribution of the equipment within your Application.

Supply House					
Your Efficiency Supplier					
9876 Some Street Another City, MI 48123 Phone 989-222-2222 Fax 989-222-1111					
Invoice For: Your City Public Schools Dew point Middle School 12345 Main Street Your City, MI 48000 248-555-5555					
SALESPERSON	P.O. NUMBER	SHIP DATE	SHIP VIA	F.O.B. POINT	TERMS
Joe Sales	DP-2710	12/15/12	Best Way	Factory	Net. 30
QUANTITY	DESCRIPTION	UNIT PRICE	TAXABLE?	AMOUNT	
100	Fixture Maker FM-14 ←A	80.00	T	8,000.00	
275	Fixture Maker FM-24 ←B	110.00	T	30,250.00	
80	Fixture Maker FM-34 ←C	180.00	T	14,400.00	
1	Labor to install	25,000.00		25,000.00	
				SUBTOTAL	\$78,650
				TAX RATE	6.00%
				SALES TAX	\$4,719
				OTHER	-
				TOTAL	\$83,369

Ref 30-1

Custom Project Lighting Example



DTE Energy
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Reference
Numbers

Itemized Invoices

CUSTOMER: Your City Public School District							APPLICATION No.: DTE-14-20000		
BUILDING NAME/INSTALLATION ADDRESS: Dew Point Middle School, 12345 Main Street,Your City, MI									
REQUESTED INCENTIVES			INVOICE						NOTES
Ref. No.	EO Measure	QTY	Date	Number	Line Item	Qty	Manufacturer	Model Number	
7-1	2 Lamp HPT8 replacing T12	100	1/2/13	23-09876-00	1	100	Fixture Maker	FM-14-232N	Ballast incl
			1/2/13	23-09876-00	4	1675	Lamp Maker	LM-F32	
7-5	4 Lamp HPT8 replacing T8	25	1/2/13	23-09876-00	2	275	Fixture Maker	FM-24-432W	Ballast incl
7-6	4 Lamp HPT8 replacing T12	250							
			1/2/13	23-09876-00	4	1675	Lamp Maker	LM-F32	
7-10	6 Lamp T8 replacing 400W HID	75	1/2/13	23-09876-00	3	80	Fixture Maker	FM-24-632N	Extras for inventory. Ballast incl
			1/2/13	23-09876-00	4	1675	Lamp Maker	LM-F32	
			1/5/13	23-09876-01	1	25	Lamp Maker	LM-F32	
			1/7/13	75499	1	50	Alternate Lamper	AL-F032T8	
9-4	Occupancy sensors	400	1/7/13	Inv-6579	1	350	Sensor Maker	SM-OSLB	
				27698-00	2	50	Sensor Fab	SF-231	
12-3	175 Ton Centrifugal Chiller	1	12/15/12	976500-01	1	1	Comfort Maker	CM14-175SGKL-460	

An Invoice Summary must be submitted for:

- (a) a single project having three (3) or more Invoice pages
- (b) multiple projects sharing three (3) or more Invoice pages

This self-explanatory example is of a completed Invoice Summary for a single project with six (6) separate Invoices.
To complete an Invoice Summary for your project, please use the **Create Your Invoice Summary Sheet (Tab)** in this Workbook.
You can configure it to meet your needs.

We will provide this form for your invoice summary.



T12 Baseline Wattage Table

For energy efficiency reasons, T12 lamps are no longer manufactured or imported into the United States in U-bend or linear 4- and 8-foot configurations. For these configurations, the Standard T8 is the minimum available lighting system.

Therefore, the baseline (pre-upgrade) wattages used for custom projects replacing U-bend or linear 4-foot and 8-foot T12 lighting with another lighting system have been adjusted to reflect the energy use of the minimum available, Standard T8 lighting system.

8-foot T12 Lamps

Fixture	Standard T12	High-Output T12
1-lamp	58	80
2-lamp	112	160
3-lamp	170	240
4-lamp	224	320
6-lamp	336	480

4-foot T12 Lamps

Fixture	
1-lamp	31
2-lamp	58
3-lamp	85
4-lamp	112
5-lamp	143
6-lamp	174
8-lamp	232

3-foot T12 Lamps

Fixture	
1-lamp	37
2-lamp	67
3-lamp	105
4-lamp	132

2-foot T12 Lamps

Fixture	
1-lamp	25
2-lamp	50
3-lamp	70
4-lamp	100

T12 U-Lamps

Fixture	
1-lamp	32
2-lamp	60
3-lamp	92

The baseline wattages assumed for upgrades from 2- and 3-foot T12 lighting systems continues to be those T12 lighting systems, respectively. All custom projects for upgrades from T12 lighting will use the baseline wattages listed here.



Modifications to the Custom Lighting Example

Custom Project Lighting Example



DTE Energy
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Completed Custom Page

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10	311,800	\$0.07	\$21,826	\$40,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

\$20,000

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$40,000	311,800	\$0.10	1.28	\$21,826	\$20,000
	Natural Gas						
Total Measure Cost					Total Custom Incentive		\$20,000



Example 1 – Change in MC

Existing

Metal Halide Fixtures*

Proposed

Fluorescent 3 Lamp T5HO Fixtures

Current Conditions		Proposed Conditions	
Average Energy Cost	\$0.10/kWh		
Fixture Type	400W HID	Fixture Type	3-lamp T5HO
Fixture Quantity	250	Fixture Quantity	200
Watts per Fixture**	455 Watts	Watts per Fixture**	179 Watts
Annual Operating Hours	4000 Hours	Annual Operating Hours	4000 Hours
		Measure Cost	\$30,000

The Measure Cost has changed

*Metal Halide fixtures are HID fixtures and can be found under the HID category on the Application.

**Includes ballast

Custom Project Lighting Example



DTE Energy
Know Your Own Power®

Example 1: change in measure cost

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.10	311,800	\$0.07	\$21,826	\$30,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

DNQ

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric \$30,000	311,800	\$0.10	.96	\$21,826	DNQ
	Natural Gas					
Total Measure Cost					Total Custom Incentive	



Example 2 – Missing Information

Existing

Metal Halide Fixtures*

Proposed

Fluorescent 3 Lamp T5HO Fixtures

Current Conditions		Proposed Conditions	
Average Energy Cost	\$??/kWh		
Fixture Type	400W HID	Fixture Type	3-lamp T5HO
Fixture Quantity	250	Fixture Quantity	200
Watts per Fixture**	455 Watts	Watts per Fixture**	179 Watts
Annual Operating Hours	4000 Hours	Annual Operating Hours	4000 Hours
		Measure Cost	\$40,000

Average Energy Cost is not available

*Metal Halide fixtures are HID fixtures and can be found under the HID category on the Application.

**Includes ballast

Custom Project Lighting Example



DTE Energy
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Example 2: missing information

Ref# 29-1

Location (building name, etc.) Bay 1

Description									
Before Retrofit					After Retrofit				
Quantity (250) - 400 W Metal Halide fixtures, 455 watts / fixture, High Bay application					Item A - Quantity (200) - Fluorescent 3 lamp T5HO fixtures, 179 watts/fixtures, High Bay application				
"Before" hours of operation calculation for this specific equipment					"After" hours of operation calculation for this specific equipment				
Hours/week		Weeks/year		Non-work days/year	Hours/week		Weeks/year		Non-work days/year
Hours used per year (a)	4,000	kW (b)	113.75		Hours used per year (c)	4,000	kW (d)	35.80	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh		311,800	\$0.07	\$21,826	\$40,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input checked="" type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☐ Yes ☒ No

Capped Measure Incentive
(from Total Awarded Incentive below)

DNQ

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)		Electric	\$40,000	311,800		\$21,826	DNQ
		Natural Gas					
Total Measure Cost				Total Custom Incentive			



Non-Lighting Custom Project



Custom Project Compressed Air



DTE Energy
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Custom Compressed Air

Ref# 29-1

Location (building name, etc.) Compressor Room

Description											
Before Retrofit						After Retrofit					
(1) 150 HP modulating air compressor						(1) 100 HP VSD air compressor					
"Before" hours of operation calculation for this specific equipment						"After" hours of operation calculation for this specific equipment					
Hours/week	140	Weeks/year	52	Non-work days/year	4	Hours/week	140	Weeks/year	52	Non-work days/year	4
Hours used per year (a)		7,200		kW (b)		70.54		Hours used per year (c)		7,200	
								kW (d)		25.92	

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh	\$0.12	320,616	\$0.07	\$22,443.12	\$60,000
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) – (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Elec.	Category	Gas
<input type="checkbox"/>	Lighting	
<input type="checkbox"/>	HVAC	<input type="checkbox"/>
<input type="checkbox"/>	Miscellaneous	
<input checked="" type="checkbox"/>	Process	<input type="checkbox"/>
<input type="checkbox"/>	Food Service	<input type="checkbox"/>
	Hot Water/Laundry	<input type="checkbox"/>
	Insulation	<input type="checkbox"/>

Will the "After Retrofit" specific piece of equipment listed here be in operation during the hours of 3–6 p.m. on Monday–Thursday in the month of July?

☒ Yes ☐ No

Capped Measure Incentive
(from Total Awarded Incentive below)

\$22,443.12

		Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (Includes values entered on pages 29-31)	Electric	\$60,000	320,616	\$0.12	1.56	\$22,433.12	\$22,433.12
	Natural Gas						
Total Measure Cost		\$60,000				Total Custom Incentive	\$22,433.12



Custom Compressed Air Project

Project Description:

- **Replace** 150 HP modulating air compressor with 100 HP VSD air compressor
- **Currently:** Motor runs constant speed
- **Goal:** Only motor runs any speed necessary
- **Energy reduction:** The Variable Speed Drive varies the motor power to meet pressure requirements
- **Planned incentive:** more than \$20,000



Custom Compressed Air Project

Items to Submit:

- Completed Application
- Compressed Air Data Summary
- M & V Plan
(if included in project by contractor)
- Energy Calculations
 - Provide Pre and Post upgrade energy use and method of determination
 - Whole Building Modeling - Computer model input and output files, if necessary
 - Whole Building Metering
 - Equipment or Process Sub-Metering
 - Formula based excel sheets with measurements/assumptions



Custom Compressed Air Project

Items to Submit:

- **Supporting Documentation**

(provide necessary proof of all assumptions and numbers in calculations)

- Pre and Post equipment drawings/process diagrams
- Construction schedule/operating hours
- Pictures/energy audit
- Trend data/meter data/load profile

- **Itemized Invoice**

(provide quote for reservation of funds)

- **Manufacturer's information:**

- Make, model, and certified performance data/design specifications



Compressed Air Summary (excerpt)

Air Compressor Replacement Data Summary

Project ID No. _____

An air compressor replacement or retrofit can result in improved efficiency for the compressed air system. By itself, however, it will not reduce plant production operating hours, pressure or airflow. Thus, these system parameters should remain relatively constant and will be used to ensure that energy savings are from efficiency improvements and not other means, such as load reduction or leak repair.

Minimum Required Supporting

- 1. At a minimum, one week (168 hours) of continuously monitored energy use (pressure, power, and airflow) is required for both pre- and post-upgrade conditions. Time periods selected for monitoring should be representative of annual average operating conditions for the post-upgrade situation. If this is not feasible, all necessary data adjustments must be explained in writing. Both raw data (in spreadsheet format) and summarized data (in tabular or graphical format) must be provided.
- 2. Compressed Air & Gas Institute (CAGI) Data Sheets for all new air compressors.
- 3. If available, manufacturer's performance data for all pre-upgrade air compressors.

Notes:

- 1. Depending on the nature and scope of your project, additional documentation or data may be required.
- 2. It is preferred, but not required, that pre-upgrade monitoring take place immediately prior to system upgrade and that post-upgrade monitoring take place immediately after system upgrade.

Project Overview

- Will pre-upgrade air compressor(s) be replaced?
- Will pre-upgrade compressor(s) be retrofitted with new controls (which may include a VFD)?
- Will pre-upgrade compressor(s) be retained, without modification, for backup, base-load, or other use?
- Will ancillary equipment (such as storage tanks, dryers, piping, etc.) be replaced, retrofitted or otherwise modified as part of this upgrade project? If yes, please provide details (original and proposed new sizes, types, etc., and how it will impact

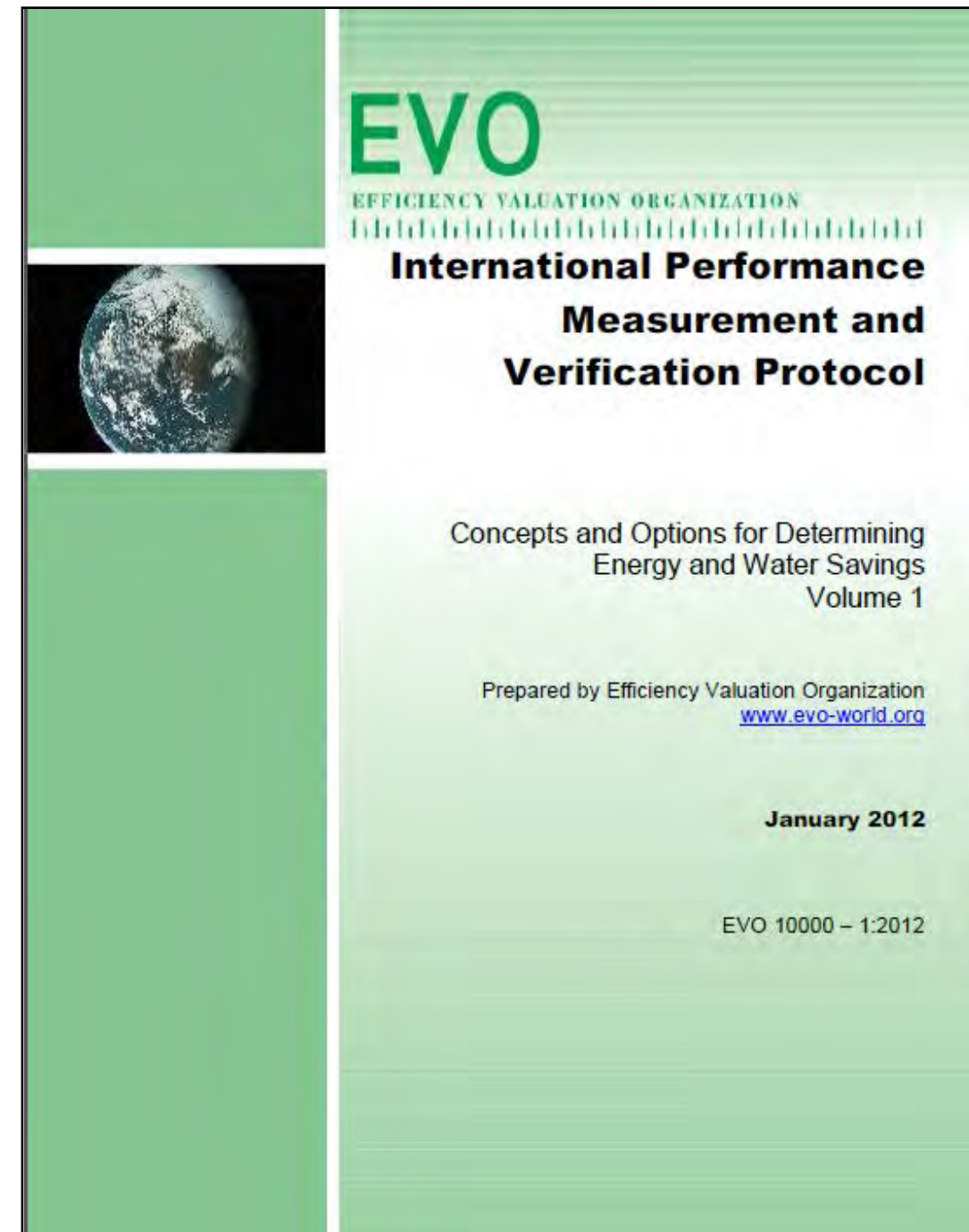
Air Compressor #1	Air Compressor #2



Metering and Verification Plan

Using **IPMVP 2012 Vol. 1** protocol, a M&V Plan will be used to show how savings will be proved and which baseline will be used.

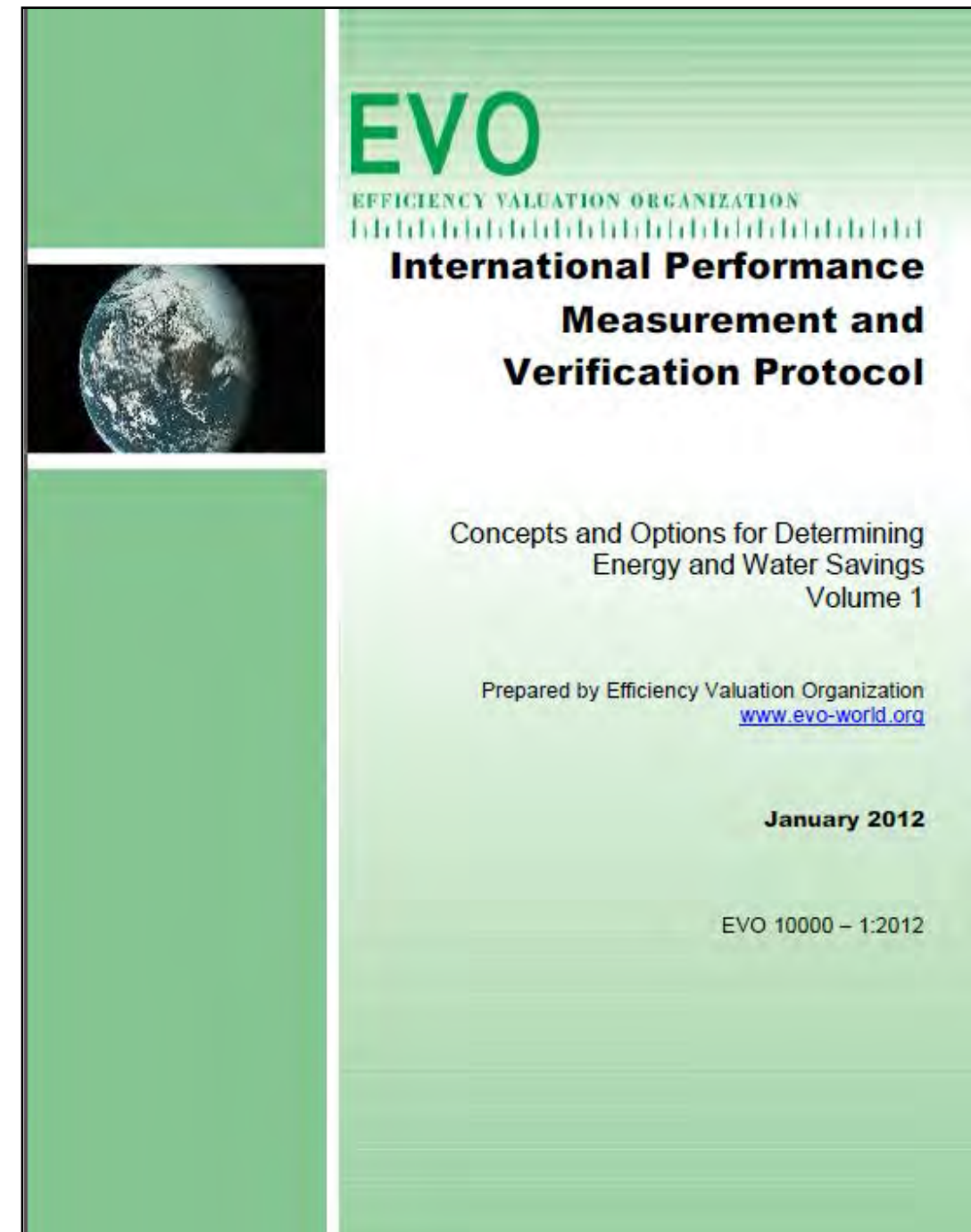
The Program Team will develop this plan for the project or can use existing M&V Plans already in place for the project.





M & V Options

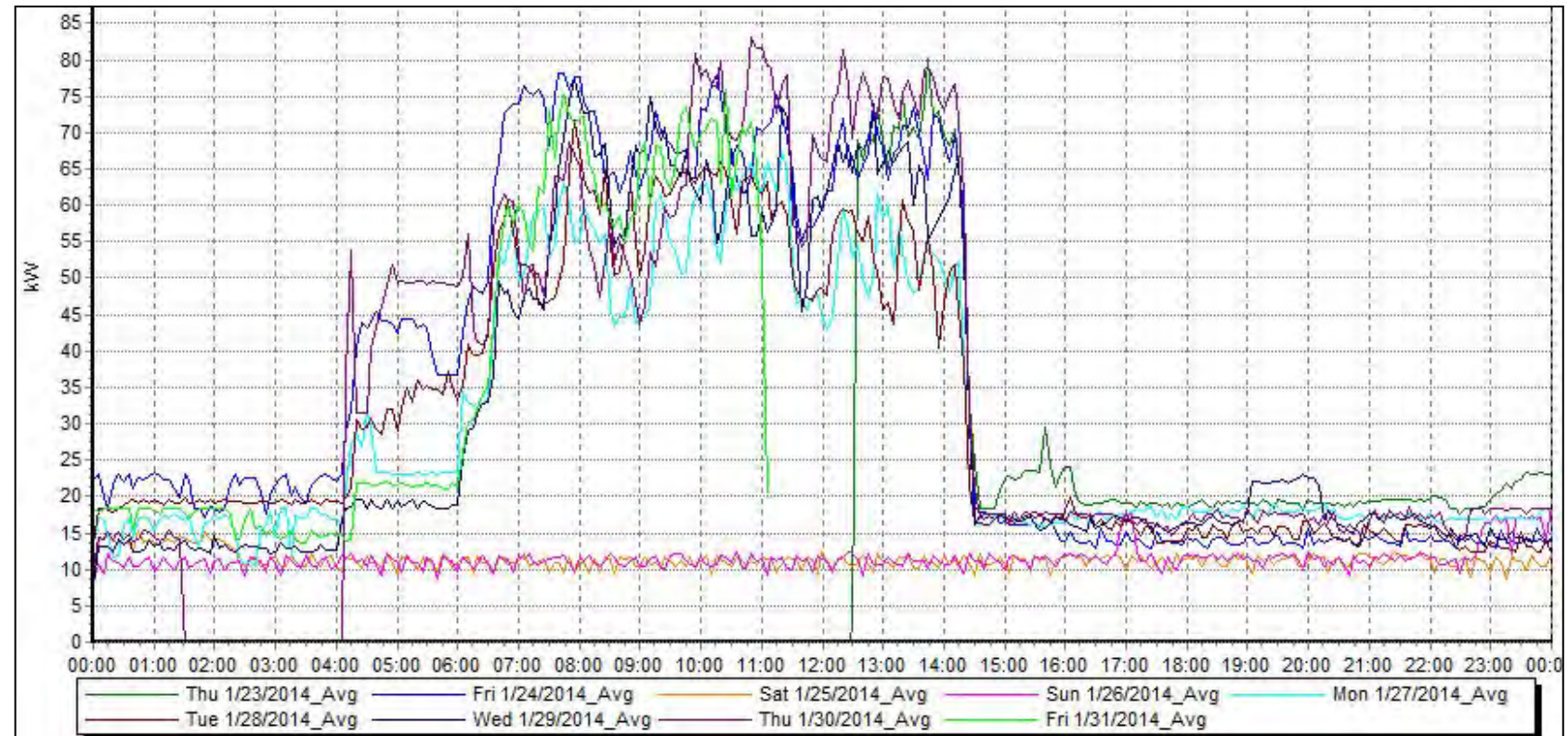
- **Option A:** Key Parameter Measurement
- **Option B:** All Parameter Measurement
- **Option C:** Whole Facility
- **Option D:** Calibrated Simulation/Model





System Sub-Metering

- For measures that impact large or complex, single systems
- Additional documentation requirements are:
 - Pre- and post-upgrade metered consumption data
 - Written report with metered (logged) data in graphical format and summarized in tabular form





Whole Building Metering

- For measures that impact single systems and also significantly reduce the total monthly energy usage.
- Additional documentation requirements are:
 - Pre- and post-upgrade metered consumption data
 - Normalized energy data





Whole Building Modeling

- For measures that impact multiple building systems
- Additional documentation requirements are:
 - Written input and output reports from DOE-approved software
 - Electronic files from DOE-approved software
 - Energy savings verified with post-upgrade utility data

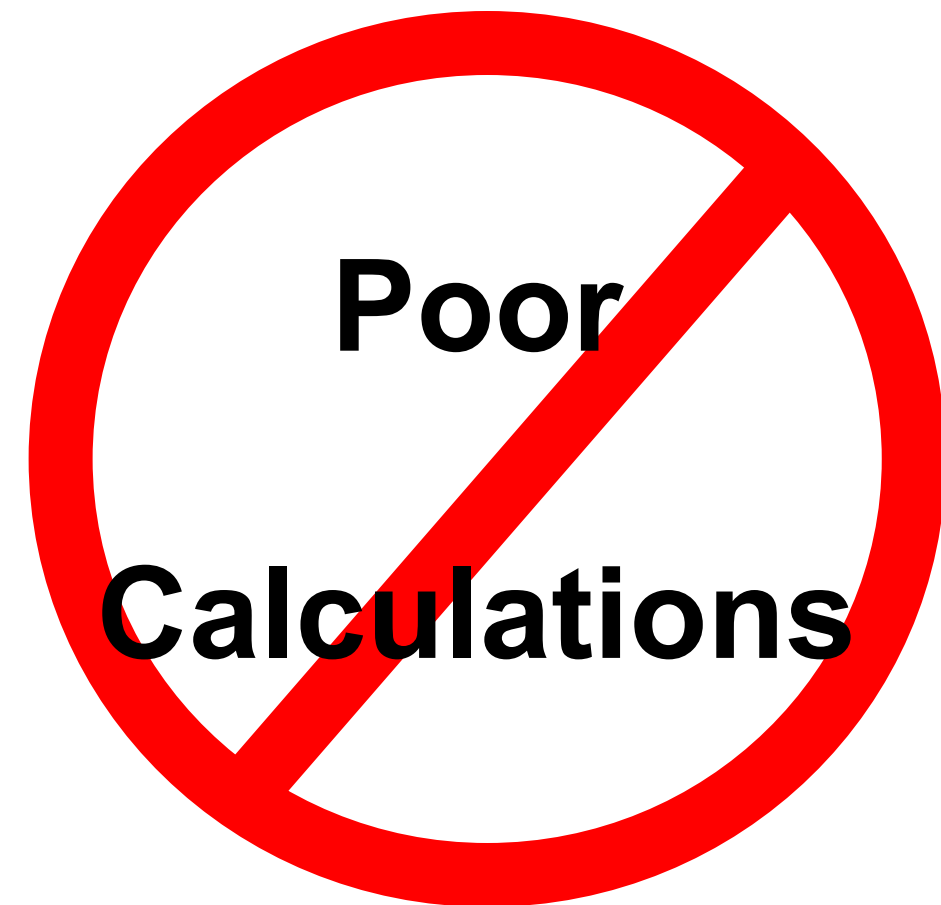




Energy Calculations

Avoid submitting the following types of calculations:

- Simple percentages
- Rules of Thumb
- Assuming results from other sites
- Marketing data



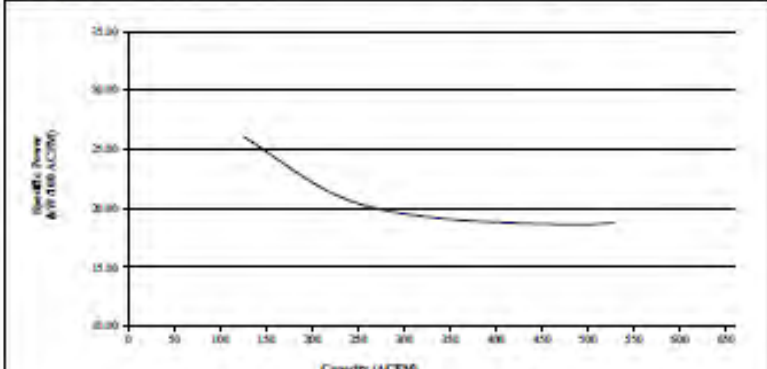
Custom Project Compressed Air



DTE Energy
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Manufacturer Specifications

Include CAGI
data sheet for
new VSD
compressor

KAESER COMPRESSORS		COMPRESSOR DATA SHEET																													
		Rotary Compressor: Variable Frequency Drive																													
		MODEL DATA - FOR COMPRESSED AIR																													
1	Manufacturer:	Kaeser Compressors, Inc.																													
2	Model Number:	SFC 75 - 125 psig / 460V/3ph/60Hz	Date:	12/3/2012																											
	<input checked="" type="checkbox"/> Air-cooled <input type="checkbox"/> Water-cooled		Type:	Screw																											
	<input checked="" type="checkbox"/> Oil-injected <input type="checkbox"/> Oil-free		# of Stages:	1																											
3	Rated Operating Pressure	125	psig ^b																												
4	Drive Motor Nominal Rating	100	hp																												
5	Drive Motor Nominal Efficiency	95.0	percent																												
6	Fan Motor Nominal Rating (if applicable)	1.9	hp																												
7	Fan Motor Nominal Efficiency	86.5	percent																												
8 ^a	Input Power (kW)	Capacity (acfm) ^{a,d}	Specific Power (kW/100 acfm) ^d																												
	99.0	Max	528	18.77																											
	89.0		478	18.62																											
	63.7		331	19.22																											
	48.2		229	21.04																											
	32.9	Min	126	26.05																											
9 ^a	Total Package Input Power at Zero Flow ^{a,2}	0.0	kW																												
10	 <p>Note: Graph is only a visual representation of the data in Section 8. Note: Y-Axis Scale, 10 to 35, + 5kW/100acfm increments if necessary above 35. X-Axis Scale, 0 to 25% over maximum capacity.</p>																														
<p>*For models that are tested in the CAGI Performance Verification Program, these items are verified by program administration. Consult CAGI website for a list of participants in the third party verification program: www.cagi.org</p> <p>NOTES:</p> <ol style="list-style-type: none">Measured at the discharge terminal point of the compressor package in accordance with ISO 1217, Annex E; acfm is actual cubic feet per minute at inlet conditions.The operating pressure at which the Capacity and Electrical Consumption were measured for this data sheet.No Load Power: In accordance with ISO 1217, Annex E, if measurement of no load power equals less than 1%, manufacturer may state "not significant" or "0" on the test report.Tolerance is specified in ISO 1217, Annex E, as shown in table below: <p>NOTE: The terms "power" and "energy" are synonymous for purposes of this document.</p> <table border="1"><thead><tr><th colspan="2">Volume Flow Rate at specified conditions</th><th>Volume Flow Rate</th><th>Specific Energy Consumption</th><th>No Load / Zero Flow Power</th></tr><tr><th>m³/min</th><th>SCFM</th><th>%</th><th>%</th><th></th></tr></thead><tbody><tr><td>Below 0.5</td><td>Below 15</td><td>+1/-7</td><td>+1/-8</td><td rowspan="4">±1-30%</td></tr><tr><td>0.5 to 1.5</td><td>15 to 50</td><td>+1/-6</td><td>+1/-7</td></tr><tr><td>1.5 to 15</td><td>50 to 500</td><td>+1/-5</td><td>+1/-6</td></tr><tr><td>Above 15</td><td>Above 500</td><td>+1/-4</td><td>+1/-5</td></tr></tbody></table>					Volume Flow Rate at specified conditions		Volume Flow Rate	Specific Energy Consumption	No Load / Zero Flow Power	m ³ /min	SCFM	%	%		Below 0.5	Below 15	+1/-7	+1/-8	±1-30%	0.5 to 1.5	15 to 50	+1/-6	+1/-7	1.5 to 15	50 to 500	+1/-5	+1/-6	Above 15	Above 500	+1/-4	+1/-5
Volume Flow Rate at specified conditions		Volume Flow Rate	Specific Energy Consumption	No Load / Zero Flow Power																											
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Above 15	Above 500	+1/-4	+1/-5																												



ROT-031

This form was developed by the Compressed Air and Gas Institute for the use of its members. CAGI has not independently verified the reported data.

Custom Project Application Review



DTE Energy
Know Your Own Power®

Requirements - Recap

- Completed Application
- Assumptions
- Pre- and Post-upgrade equipment or process description
- Pre- and Post-upgrade energy use and Method of Determination
- Computer model input and output files, if applicable

IMPORTANT NOTE: Use the reference numbers in the left column to identify and mark all related invoices, specification sheets and other documents related to this measure and submitted with this Application.

DTE Energy
Know Your Own Power®

Custom Incentive Worksheet **IMPORTANT:** If you fail to complete each section, check the appropriate category or enter all required information, the worksheet will not calculate your incentive and carry the value to Page 6.

Must be submitted BEFORE project begins.

See Instructions on Page 27. Complete every blank box for each item you submit. Please attach all equipment specifications to your Reservation Application before you submit for review.

Ref# 29-1 Location (building name, etc.)

Description		Before Retrofit		After Retrofit	

"Before" hours of operation calculation for this specific equipment:

Hours/week	Weeks/year	Non-work days/year

"After" hours of operation calculation for this specific equipment:

Hours/week	Weeks/year	Non-work days/year

Hours used per year (a) kW (b) Hours used per year (c) kW (d)

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Ref# 29-2 Location (building name, etc.)

Description		Before Retrofit		After Retrofit	

"Before" hours of operation calculation for this specific equipment:

Hours/week	Weeks/year	Non-work days/year

"After" hours of operation calculation for this specific equipment:

Hours/week	Weeks/year	Non-work days/year

Hours used per year (a) kW (b) Hours used per year (c) kW (d)

Service	Unit	Current Energy Cost (\$ per Unit)	Annual Savings* (Units/Year) (A)	Incentive Rate (\$ per Unit) (B)	Calculated Incentive (A x B)	Measure Cost
Electric	kWh			\$0.07		
Natural Gas	Mcf			\$4.00		

* For Electric projects use the following formula: (a x b) - (c x d). For natural gas projects, you must enter your own calculated Annual Savings and provide documentation.

Electric Simple Payback Period must be >1 to <5 years

Electric Aggregate Measure Cost

Gas Simple Payback Period must be >1 year

Gas Aggregate Measure Cost

	Aggregate Measure Cost	Aggregate Annual Savings	Current Energy Cost	Simple Payback Period*	Total Calculated Incentive	Total Awarded Incentive**
Total Custom Incentives (includes values entered on pages 29-31)	Electric					
	Natural Gas					
Total Measure Cost					Total Custom Incentive	

IMPORTANT NOTES:

* The Simple Payback Period must fall within the electric or gas parameters to qualify for an incentive (see formula above). If the Total Awarded Incentive for either electric or gas displays DND (does not qualify), then the payback period fell outside of required parameters or the measure cost/or energy savings were missing.

** Total Awarded Incentives for each utility are capped at no more than 50% of the Total Measure Cost. If one utility does not qualify for an incentive, the other utility is capped at no more than 50% of the Aggregate Measure Cost for that utility.

If you require assistance completing this section, contact our office.

dteenergy.com/savenow 29 V2-03/01/15



Requirements - Recap

- Equipment operating hours, schedule and load profile
- Measure location/area
- Manufacturer's make, model, specifications and certified performance data
- Quote (for reservation of funds) and invoice (for payment of incentive)
- Other documentation as required (CICP – Customer/Contractor Incentive Calculation Plan)

Customer / Contractor Incentive Calculation Plan				
Reservation				
APPLICATION NO.	15-#####	DATE:		
ENGINEER:		PHONE:	313-664-1900 x	
TOTAL INCENTIVE:	\$0.00	ANNUAL SAVINGS (kWh)	0.00	
		ANNUAL SAVINGS (Mcf)	0.00	
CUSTOMER:				
FACILITY ADDRESS:				
CONTRACTOR:				
INTRODUCTION:				
Table 1: Project Measures and application savings estimates				
Measure	Annual Savings, per Application (kWh or Mcf)	Annual Savings, per DTE calculation (kWh or Mcf)	Application Net Project Cost	DTE Incentive
Table 2: Schedule of Milestones/Actions				
Milestone	Date Needed	Responsible Party	Date Complete	
A.				



Thank you for joining us today!

**Engineers will remain
available for additional questions**





**If you have questions,
please contact our office**

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Phone: **866.796.0512** (press option 3)

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