DTE CleanVision Energy Efficiency

Energy Efficiency Program for Business

2025 Program rebate catalog

The DTE Energy Efficiency Program for Business offers businesses like yours rebates for new energy-efficient improvements including lighting, HVAC, process and more. Just follow the simple steps in this catalog to begin the process. We look forward to working with you.

Contact Information

If you have questions or need assistance, please contact us at saveenergy@dteenergy.com or **855.748.2525**

Application process

The DTE Energy Efficiency Program for Business has prepared this catalog to provide information about the specific rebate programs available under this initiative.

To apply for rebates, you will need to complete the separate program application, which can be found online at dteenergy.com/business/application.

Follow these easy steps:

1. Eligibility

To apply for rebates, you must be a DTE commercial or industrial customer in good standing (for electricity, if you're applying for electric rebates, and natural gas, if applying for natural gas rebates). Your project must be installed at a facility served by DTE (one facility per application). An exception is limited to agricultural customers that are on both residential and commercial rate codes: they have access to a special list of energy efficiency measures designed to specifically meet the needs of the farming, dairy and greenhouse communities. These rebates are available only to commercial rate and residential rate customers whose primary source of income is from agricultural operations and activities.

2. About the measures

Become familiar with qualifying energy-saving measures offered in this catalog. Additional details are available in our policies and procedures manual, available on our website dteenergy.com/equipment-rebates. Equipment installed must meet the specifications detailed in this catalog. If you need assistance with understanding technical information or the feasibility of installing certain measures, contact our program team or one of our participating contractors, all of whom are familiar with the program. A searchable directory is available online at dteenergy.com/business. You are not required to use a participating contractor to complete your project.

3. Reservation applications

Project not completed or even started? Submit your application to reserve rebates from our limited funds. Our application can be found at dteenergy.com/business/application. Submit your application online including required documentation such as itemized invoices, manufacturers' specification sheets for the items installed, and other applicable documentation. Reservation applications are strongly encouraged for all projects and are required prior to starting any custom and some prescriptive projects (see the application for more information). A custom project is one with measures that are not on our list of prescriptive measures. For more information, see page 42 or call us. Is your prescriptive project already completed? See step 5 below.

4. Installation

Complete your project within 90 days of the date indicated on your reservation letter from us that confirms we are holding rebate funding for you or by December 1, 2025 – whichever comes first.

5. Project completion (final applications)

Submit your online application and all required documentation to us, including dated, itemized invoices, manufacturers' specification sheets for the items installed, and the rebate summary, final agreement information and account holder signature page signed by the customer. The final application must be submitted within 60 days of completion of your project or by December 1, 2025, whichever comes first. Applications submitted after that date may be canceled.

Complete and submit an online application at dteenergy.com/business/application.

Program and project eligibility

DTE Energy is offering a comprehensive set of rebate measures to facilitate the implementation of cost-effective, energy efficiency improvements for business customers.

The rebate program offers business customers prescriptive measures for many common energy efficiency measures and custom measures for other eligible energy efficiency improvements. This program is not available to DTE customers in multifamily buildings or residential complexes. These customers are eligible to participate in the Multifamily Program or Residential Programs for energy saving upgrades to both tenant and common areas.

For custom measures, the maximum allowable rebate is limited to 50% of the allowable implementation cost of all eligible custom measures. Internal customer labor costs cannot be included in project costs. Custom projects must have a simple project payback period greater than one year.

Program rebates are limited per customer for each program year. The customer is defined as the business entity, with a unique taxpayer ID number, that is responsible for the DTE utility bill for one or more facilities.

Funds are limited and rebate payments are dependent on fund availability. Completed final applications for the program year must be received by December 1, 2025. Applications received after that date will be canceled.

2025 program year rebate limits

Participation in the program is subject to annual rebate limits as follows:

	Electricity	**Gas**
Customer	$1,000,000	$300,000

Reservation application process

A reservation is required for all custom and certain prescriptive measures, such as interior LEDs, and strongly encouraged for all other prescriptive measures in order to pre-approve rebate levels and reserve potential funding. If your project requires a reservation, do not begin any part of your project (including removal of old equipment) until after you have submitted your reservation application, allowed us the opportunity (up to 14 days) to conduct any pre-upgrade inspections that may be required and have issued you a reservation letter confirming that funds have been reserved for your project. The Energy Efficiency Program for Business team will review project eligibility and will contact you to conduct any pre-upgrade inspections that may be necessary to reserve program funds. Neither an application nor a reservation will guarantee an rebate. Actual rebates will be calculated based on the final application. Project funds will be reserved for 90 days, or until December 1, 2025, whichever comes first. Notify us at reservation submittal if your project will take longer than 90 days to complete. However, no project will be extended beyond December 1, 2025.

Final application review process

Final applications must be submitted within 60 days of project completion or by December 1, 2025, whichever comes first.

Applicants who submit incomplete applications will be notified of deficiencies. Final applications for each site must include project documentation, including copies of dated, itemized invoices for purchases and, if applicable, cost of installation of the energy efficient equipment and manufacturers' product specifications. Required documentation may vary based on type of application.

The project invoice must provide sufficient detail to separate the project cost from the cost of other services, such as repairs and building code compliance, as well as show the location where the measures were installed. Invoices must be dated and itemized and must clearly identify the equipment pertaining to the project for which rebates are requested. Multiple projects using the same invoices must be itemized by site, and the sum of all quantities of equipment per site must not exceed the total invoice quantity. Within the online application, upload all related specifications, invoices and other supporting documentation with reference number(s). Reference numbers are listed alongside each measure within the program application. DTE reserves the right to request additional supporting documentation as deemed necessary to ensure measure eligibility and verify that the expected energy savings will occur. Requested information may include: floor plans, mechanical plans, demolition plans, equipment purchase dates, installation dates, proof that the equipment is operational, warranty information and proof of customer payment. Applicants should call 855.748.2525 if they have any questions about documentation requirements. All customer information will be held in confidence.

Once all required project information is received, the team will evaluate it to confirm that the project meets the program eligibility criteria and perform necessary inspections and/or technical reviews. Rebate checks can be expected four to six weeks after project final approval.

Inspections

DTE reserves the right to inspect all projects to verify compliance with program rules and verify the accuracy of project documentation. This may include pre-installation and/or post-installation inspections. Detailed lighting layout descriptions, metering, data collection, interviews and other information may be requested as appropriate.

Third-party payments

Participating Contractors

DTE account holders (customers) may assign payment of their rebates only to a participating contractor. This is defined as a company/individual who is familiar with the program offerings, filled out required documentation, and is otherwise in good standing.

To authorize such a payment, the account holder must complete and eSign the Third Party Payment Authorization section of the online application agreement form sent via DocuSign.

If a third-party payment is authorized for a contractor who is not a participating contractor in good standing, the rebate will be paid to the account holder.

Landlord/tenants

DTE account holders (customers) who are facility landlords may assign payment of their rebates to a designated tenant.

To authorize such a payment, the account holder must complete tenant payment authorization form, or found in the Helpful Documentation section of the online Rebate Application at dteenergy.com/business/application.

If a third-party payment is authorized for a tenant who is not eligible to receive payment, the rebate will be paid to the account holder. (For more information about this policy, see the program's policies and procedures manual.)

2025 additional program information

DLC & ENERGY STAR®

Only DesignLights Consortium® (DLC) listed products and ENERGY STAR® certified products are eligible for lighting rebates. In order to receive a rebate, you must list the DLC product ID or write "ENERGY STAR" in the field on prescriptive worksheets or in the "after retrofit" field on a custom worksheet. If your lighting equipment falls in a category not listed by DLC or ENERGY STAR, you may apply for rebates by using our non-DLC category product approval form. You're encouraged to attach the manufacturer's specification sheets with the DLC product ID to your reservation application; you must submit the sheets with your final application.

Dual fuel measures

Measures marked with this icon mean that they appear in both the gas and electric sections of the application. If you are an electric and a gas customer of DTE, then you may apply for both electric and gas utilities within the same application.

New construction

Measures marked with this icon are eligible for the new construction program. When applying for new construction measures, please indicate that you are completing a new construction or major renovation project, as well as select your project type in the online Rebate Application. Specifications for systems approach (prescriptive) measures have the same specifications listed in the program catalog; however, for new construction and major renovation projects, references to "replacing" equipment should be understood to mean installing "new" equipment. Reservation applications are not required for new construction projects, although it is recommended.

Final applications must include manufacturers' specification sheets for all equipment that is eligible to receive a rebate if not included with the reservation application.

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Prescriptive electric measures and specifications

Lighting specifications

Certain prescriptive measures require a reservation application. See individual specifications and the application for more information. All final applications must include manufacturers' specification sheets for lamps and ballasts demonstrating compliance with the specifications listed below. Screw-in LED lamps are not eligible for rebates, with the exception of mogul base (E39) lamps. Note: These rebates are not available for lamps and fixtures purchased at retail stores participating in the DTE lamp discount program. Rebates for lamps and fixtures purchased from those retailers is included in the discounted price.

LED lighting, shift operation (reservation required)

Measure ID	Equipment Type	Hours/Week	Unit
L-1	LED lighting, 1-shift operation	1 - 65	Kilowatt reduced
L-2	LED lighting, 2-shift operation	66 - 115	Kilowatt reduced
L-3	LED lighting, 3-shift operation	116 - 167	Kilowatt reduced
L-4	LED lighting, 24/7 operation	168	Kilowatt reduced

L-1 to L-4 – LED lighting, 1-3 shift and 24/7 operation (reservation required)

Rebates are available for LED interior lamps or fixtures replacing existing lamps or fixtures with hours of use typical of one-shift, two-shift, three-shift and 24/7 operations prior to installation of new lighting. See table for acceptable range of hours per week. Replacement fixtures or lamps must be DLC-listed or ENERGY STAR®-rated.

Incandescent/Halogen/CFL to ENERGY STAR® certified LED

Measure ID	Equipment Type	Unit
LL-3	LED recessed down light fixture (reservation required)	Fixture

LL-3 – LED recessed down light fixture (reservation required)

Rebates are available to replace functioning incandescent/halogen/CFL recessed down light fixtures or lamps in ceilings or walls with new LED recessed down light fixtures or lamps. Replacement fixtures must be ENERGY STAR-certified. Existing fixtures must not be burnt out.

Illuminated signs to LED

Measure ID	Equipment Type	Unit
LL-86	Illuminated signs to LED - Exterior	Kilowatt reduced

LL-86 – Illuminated signs to LED – exterior

Rebates are available for the replacement of incandescent, fluorescent, or neon signs with LED lights. Existing lights should be in operation 24/7, and the existing fixture must be permanently retrofitted or replaced with a new LED fixture. The new LED driver must have built-in power factor correction and an IES TM21 useful life ≥50,000 hours. Rebates will be calculated based on watts reduced.

Exterior LED lighting retrofit

Measure ID	Pre-Upgrade Equipment	Unit
LL-20D	50 to 149W	Fixture
LL-21D	150W to 249W	Fixture
LL-22D	250W to 499W	Fixture
LL-84D	500W+ (reservation required)	Fixture

LL-20D to LL-22D; LL-84D – Exterior LED lighting retrofit (annual operating hours < 8,760) (reservation required for LL-84D)

Rebates are available for replacing lamps or fixtures with LED lamps or fixtures. Existing fixtures must operate less than 8,760 hours per year (less than 24 hrs/day). Fixture replacement must result in at least a 40% power reduction. Wattage range refers to nominal lamp wattage prior to installation of LED. Replacement lamps/fixtures must be DLC-listed or ENERGY STAR-rated. Fixture quantity must remain the same before and after retrofit. If not, the project may qualify for custom measures.

Exterior/garage LED lighting

Measure ID	Equipment Type	Unit
LL-87D	Exterior/Garage LED Lighting, 24/7 operation	Kilowatt reduced

LL-87D Exterior/garage LED lighting, 24/7 operation (reservation required)

Rebates are available for replacing lamps or fixtures with LED lamps or fixtures. Existing fixtures must operate 24/7 hours year round. Fixture replacement must result in at least a 40% power reduction. Wattage range refers to nominal lamp wattage prior to installation of LED. Replacement lamps/fixtures must be DLC-listed or ENERGY STAR-rated. Fixture quantity must remain the same before and after retrofit. If not, the project may qualify for custom measures.

Lighting specifications

Controls/daylighting

Measure ID	Equipment Type	Unit
LO-3	Interior central lighting control	10,000 sq. ft.
LO-4	Interior switching controls for multilevel lighting	10,000 sq. ft.
LO-5	Interior daylight sensor controls	Watt controlled
LO-8	Interior stairwell lighting controls	Kilowatt controlled
LO-9	Exterior lighting, bi-level control with override	Fixture
LO-10	Exterior dimming timer controls	Watt controlled
LO-11	Tubular skylights (light tubes)	Tube
LO-13	Exterior LED lighting bi-level controls	Fixture
LO-14	Garage LED lighting bi-level controls	Fixture
LO-15	Garage LED bi-level controls w/ photocell	Fixture
LO-60 to LO-62	Interior combined occupancy	Sensor
LO-63 to LO-65	Interior occupancy sensors and daylight sensor	Sensor

NOTE: Rebates are available for only one lighting control measure for a given space. There must be no previously existing automated control in the area for which rebates are being applied.

LO-3 – Interior central lighting control

Rebates are available for automated central lighting control systems with override capabilities. This measure includes time clocks, package programmable relay panels and complete building automation controls. Fractional values are allowed for areas that are not multiples of 10,000 square feet. Floor plan must be submitted verifying square footage.

LO-4 – Interior switching controls for multilevel lighting

Rebates are available to install switching controls for multilevel lighting. This measure is applicable to spaces that require various lighting levels such as classrooms, auditoriums, conference rooms and warehouses with skylights. This measure requires switching or dimming to be used in conjunction with occupancy sensors and/or daylight sensors. Fractional values are allowed for areas that are not multiples of 10,000 square feet. Floor plan must be submitted verifying square footage.

LO-5 – Interior daylight sensor controls

Rebates are available for daylight sensor controls in spaces with reasonable amount of sunlight exposure. The controls can be used to turn lights on/off, stepped dimming or continuous dimming based on light level from available daylight. This rebate cannot be combined with rebates for tubular skylights if they are in the same area.

LO-8 – Interior stairwell lighting controls

Rebates are available for interior stairwell lighting controls in which stepped dimming occupancy controls consist of a lighting system that operates at full power and full light output when the space is occupied, then at a reduced power level and reduced light output when unoccupied. In order to qualify for this rebate, the occupancy sensor must be installed in an interior stairwell or passageway requiring continuous lighting (24 hours a day) by code. The occupancy sensor must be hard-wired; it can be a passive infrared (PIR) or a microwave occupancy sensor, and the sensor must reduce the fixture output to use no more than 50% of full power.

LO-9 – Exterior 150W to 1,000W HID lighting, bi-level control with override

Rebates are available for retrofitting existing, exterior HID lighting with bi-level controls that reduce lighting levels by at least 50% when the outdoor area is unoccupied. The HID lighting must have an electronic ballast capable of reduced power levels and be coupled with motion sensors to bring the light back to full lumen output for security reasons. Eligible controls include on-off controls, dimmers and hi-lo ballast controls. This measure is applicable to exterior fixtures that are on during the night.

LO-10 – Exterior multi-step dimming timer controls

Rebates are available for timing controls that automatically reduce an exterior light fixtures' power usage during periods of low traffic. New controls must contain a time clock system featuring multistep dimming capabilities. Fixture power usage must be reduced by at least 50%, for at least five hours per night, during low traffic periods. A detailed controls scheme must be submitted indicating how the lights will be controlled.

LO-11 – Tubular skylights

Rebates are available for new tubular skylights (light tubes) 10 inches to 21 inches in diameter. This measure is applicable to spaces that normally require electric lighting during peak hours (1-4 p.m. weekdays during the summer). Must be installed with daylight sensor controls on surrounding light fixtures. Surrounding areas are eligible for either sensor rebates or skylight rebates, but not both.

LO-13 – Exterior LED lighting bi-level controls

Rebates are available for bi-level controls on exterior LED lighting that reduce lighting levels by at least 50% when the area is unoccupied. The LED lighting must be coupled with hard-wired motion sensors to bring the light back to full lumen output for security reasons. This measure is applicable to exterior fixtures that are on during the night.

LO-14 – Garage LED lighting bi-level controls

Rebates are available for bi-level controls on parking garage LED lighting that reduce lighting levels by at least 50% when the area is unoccupied. The LED lighting must be coupled with hard-wired motion sensors to bring the light back to full lumen output for security reasons. This measure is applicable to parking garage fixtures that are on 8,760 hours per year.

LO-15 – Garage LED lighting bi-level controls with photocell

Rebates are available for bi-level controls on parking garage LED lighting that reduce lighting levels by at least 50% when the area is unoccupied and photocell controls turn off the lighting when adequate daylight is available. The LED lighting must be coupled with hard-wired motion sensors and photocells to bring the light back to full lumen output for security reasons. This measure is applicable to parking garage fixtures that are on 8,760 hours per year.

Lighting specifications

LO-60 to LO-62 – Interior occupancy sensors

Rebates are available for occupancy sensors for interior areas with intermittent occupancy, which automatically turn lights off when not occupied. Vacancy sensing is also eligible. Replacing existing sensors is not eligible. The minimum amount of time for the lights to stay on when no movement is sensed (delay set time) must be 10 minutes. The sensors can be passive infrared (PIR) or ultrasonic. Sensors installed that control a single light fixture are only eligible for the < 150 square foot tier with the exception of single Highbay fixtures (≥15' from floor and typically control 500 sq.ft.) which can qualify for the 150-500 sq.ft. tier. For these exceptions, a floor plan must be provided to verify sq.ft. layout of fixtures. These measures can be combined with measures for HVAC occupancy sensors (HE-37/HE-38 and/or HG-16/HG-17) if sensors are controlling both lighting and HVAC.

LO-63 to LO-65 – Interior combined occupancy and daylight sensor

Rebates are available for sensors that detect both occupancy and light levels, and automatically turn lights off when not needed. These rebates are available for interior areas with intermittent occupancy and exposure to natural light. Vacancy sensing is also eligible. The minimum amount of time for the lights to stay on when no movement is sensed (delay set time) must be 10 minutes. The sensors can be passive infrared (PIR) or ultrasonic. Sensors installed that control a single light fixture are only eligible for the <150 square foot tier with the exception of single Highbay fixtures (≥15' from floor and typically control 500 sq.ft.) which can qualify for the 150-500 sq.ft. tier. For these exceptions, a floor plan must be provided to verify sq.ft. layout of fixtures. This rebate cannot be combined with rebates for tubular skylights if they are in the same area. These measures can be combined with measures for HVAC occupancy sensors (HE-37/HE-38 and/or HG-16/HG-17) if sensors are controlling both lighting and HVAC.

Refrigeration lighting

Measure ID	Equipment Type		Unit
LL-32D	LED refrigerated case door lighting		Door
LL-87	LED refrigerated case lighting per linear foot		Lin. ft. of case width
LL-33	Occupancy sensors for LED refrigerated case lighting		Door
FE-35	Refrigerated savings due to lighting savings	-20˚F - 0˚F	Lighting watt reduced
FE-36		0˚F - 20˚F	Lighting watt reduced
FE-37		20˚F - 40˚F	Lighting watt reduced

LL-32D – LED refrigerated case door lighting

Rebates are available to replace T12 or T8 fluorescent case lighting. Replacement lamps/fixtures must be DLC-listed or ENERGY STAR-rated as refrigeration lighting. Note: This rebate cannot be combined with rebates for refrigeration savings due to lighting wattage reduction.

LL-87 – LED refrigerated case lighting per linear foot

Rebates are available to replace T12 or T8 fluorescent case lighting. Replacement lamps/fixtures must be DLC-listed or ENERGY STAR-rated as refrigeration lighting. This rebate will be calculated based on the number of case doors or refrigerated case width. Applications claiming rebates for LL-32D or LL-87 do not qualify for additional rebates for FE-35, FE-36, and/or FE-37.

LL-33 – Occupancy sensors for LED refrigerated case lighting

Rebates are available for adding occupancy sensor controls to LED lighting in refrigerated coolers and freezers. Projects installing new refrigerated case lighting and occupancy sensors for refrigerated cases are eligible for rebates using LL-33. LL-33 may not be combined with LL-87.

FE-35 to FE-37 – Refrigeration savings due to lighting wattage reduction

Rebates are available for the reduction in refrigeration load as a result of a reduction in lighting wattage. This rebate is only available in conjunction with an eligible lighting retrofit for reach-in or walk-in coolers and freezers. The refrigerated space must be maintained between -20˚F and 40˚F at all times.

Lighting power density specifications

New construction/major renovation measures

An alternative to the LEED whole building approach (Page 38) is the systems approach, which does not require LEED certification and encourages designers to optimize the energy efficiency of the individual systems within a building. This approach is most appropriate for less complex projects; those whose systems are designed at different times, and for projects in which consideration for energy efficiency occurs later in the design phase. New construction systems approach measures cannot be combined with LEED whole building approach.

For common building types and system features, the Energy Efficiency Program for Business provides this straightforward approach to identify potential energy efficiency options and impacts. Available rebates through the systems approach are listed within the prescriptive measures section of the catalog and application and are identified by this icon:

Lighting power density

Measure ID	Equipment Type	Unit
LO-17	Interior lighting power density	Kilowatts reduced
LO-18	Garage lighting power density	Kilowatts reduced
LO-19	Exterior lighting power density	Kilowatts reduced

LO-17 to LO-19 – Lighting power density energy efficient lighting installation

Install energy efficient lighting with lighting power density (LPD) in watts per square foot less than values listed in ASHRAE 90.1-2013 corresponding to the building/space type.

- To qualify, LPD must show a reduction by at least 10% below the baseline.
- COMcheck lighting compliance document or the program's Excel LPD worksheet required. Not required for buildings less than or equal to 5,000 square feet.
- All projects claiming light savings require:
  - Scaled lighting plans and/or site lighting plans.
  - Lighting fixture schedules
  - Specification sheets for all lamps, ballasts and fixtures.
  - Explanation for any discrepancies between the plans, schedules and specifications, as well as updates not reflected on the above document requirements.
- Area is gross lighted area of each space type.
- Installed lighting power includes all power used by the luminaries, including lamps, ballasts, current regulators and control devices.
- The following lighting equipment and applications are **excluded** from the calculation of **interior** lighting power:
  - Display or accent lighting that is an essential element for the function performed in galleries, museums and monuments.
  - Lighting that is integral to equipment or instrumentation and is installed by its manufacturer.
  - Lighting specifically designed for use only during medical or dental procedures and lighting integral to medical equipment.
  - Lighting integral to both open and glass-enclosed refrigerator and freezer cases.
  - Lighting integral to food warming and food preparation equipment.
  - Lighting for plant growth or maintenance. New Construction eligible plant lighting measures can be found on page 23.
  - Lighting in spaces specifically designed for use by occupants with special lighting needs including visual impairment and other medical and age-related issues.
  - Lighting in retail display windows, provided the display area is enclosed by ceiling-height partitions.
  - Lighting in interior spaces that have been specifically designated as a registered interior historic landmark.
  - Lighting that is an integral part of advertising or directional signage.
  - Exit signs.
  - Lighting that is for sale or lighting educational demonstration systems.
  - Lighting for theatrical purposes, including performance, stage and film and video production.
  - Lighting for television broadcasting in sporting activity areas.
  - Casino gaming areas.
  - Furniture-mounted supplemental task lighting that is controlled by automatic shutoff.
- The following lighting equipment and applications are **excluded** from the calculation of **exterior** lighting power:
  - Specialized signal, directional and marker lighting associated with transportation.
  - Advertising signage or directional signage.
  - Lighting integral to equipment or instrumentation and installed by its manufacturer.
  - Lighting for theatrical purposes, including performance, stage, film production and video production.
  - Lighting for athletic playing areas.
  - Temporary lighting.
  - Lighting for industrial production, material handling, transportation sites and associated storage areas.
  - Theme elements in theme/amusement parks.
  - Lighting used to highlight features of public monuments and registered historic landmark structures or buildings.

Networked lighting controls specifications

Networked lighting controls (reservation required)

Measure ID	Equipment Type	Hours/ Week	Unit
LO-20	DLC-listed interior LED lighting 1-shift operation	1 - 65	Kilowatts reduced
LO-21	DLC-listed interior LED lighting 2-shift operation	66 - 115	Kilowatts reduced
LO-22	DLC-listed interior LED lighting 3-shift operation	116 - 167	Kilowatts reduced
LO-23	DLC-listed interior LED lighting 24/7 operation	168	Kilowatts reduced
LO-52	DLC-listed NLC system* (tier 2 only)		10,000 sq. ft.

Rebates for networked lighting controls (NLCs) will be paid out at either Tier 1 rates or Tier 2 rates. These rebates are only available for interior upgrades for human occupancy. Sensors are not eligible for additional rebate if applying for a Tier 2 NLC system. Exterior upgrades are not eligible for networked lighting controls at this time.

Tier 1: To achieve this rebate rate, the NLC system must have **at least three** of the following capabilities*:

- Networking of luminaires and devices
- Occupancy sensing
- Daylight harvesting / photocell control
- High-end trim / task tuning
- Zoning
- Luminaire and device addressability
- Continuous dimming
- Scheduling
- Energy monitoring
- Device monitoring / remote diagnostics
- Load shedding (demand response)
- External systems integration (EMS / BMS / HVAC / API)
- Scene control

For Tier 1 only: If post upgrade wattage is permanently high-end trimmed / task tuned / maximum light output under any circumstance is less than the amount the manufacturer claims, then the "trimmed" wattage may be used as the post upgrade wattage. Pictures, screenshots, or power measurements of this are required with final application.

Tier 2: To achieve this rebate rate, the NLC system must be listed on DLC's Lighting Controls QPL.

*If the area being controlled has any of these capabilities in its pre-upgrade state, then those capabilities will not count towards the requirements for achieving Tier 1. Further definitions of these terms are available on designlights.org within the technical requirements of the lighting controls content.

Rebates for fixtures and sensors in the networked lighting controls section cannot be combined with other lighting measures in the lighting rebate worksheets with the exception of occupancy sensors, combined occupancy sensors, and daylight harvesting in Tier 1 systems. Sensors not eligible for additional rebate from any program if applying for a Tier 2 NLC system. Reflected ceiling plans or other information is required upon request.

LO-20 to LO-23 – Interior LED lighting (reservation required)

Rebates are available for LED interior lamps or fixtures replacing existing lamps or fixtures with hours of use typical of one-shift to 24/7 operation prior to installation of NLC. See table for acceptable range of hours per week. Replacement fixtures must be DLC-listed or ENERGY STAR-rated. Replacement lamps must be DLC-listed. These rebates are only applicable for a simultaneous upgrade of lights and controls.

FOR TIER 2 ONLY

LO-52 – DLC-listed NLC system (reservation required)

Rebates are available for projects that are utilizing a networked lighting controls system on DLC's Networked Lighting Controls Qualified Product List. This list can be found at designlights.org. The system must be automated, must consider occupant schedules and override for safety, and a scaled floor plan is required to show square footage.

HVAC electric specifications

All equipment must be Air Conditioning, Heating and Refrigeration Institute (AHRI) rated. AHRI-rated capacities and efficiencies are used to calculate rebates.

Air conditioning systems and heat pumps

Measure ID	Equipment Type	Size Category	Qualifying Efficiency	Unit
HE-2	Unitary and split air conditioning systems	< 65,000 Btu/hr (5.4 tons)	14 SEER	Tons
HE-3		≥ 65,000 Btu/hr (5.4 tons) < 135,000 Btu/hr (11.3 tons)	12 EER	
			19 IEER	
HE-4		≥ 135,000 Btu/hr (11.3 tons) < 240,000 Btu/hr (20 tons)	12 EER	
			16.8 IEER	
HE-5		≥ 240,000 Btu/hr (20 tons) < 760,000 Btu/hr (63.3 tons)	12.5 EER	
			15.5 IEER	
HE-6		≥ 760,000 Btu/hr (63.3 tons)	13 IEER	
HE-70			11.4 IEER	
HE-7	Air source heat pumps	< 65,000 Btu/hr (5.4 tons)	15.0 SEER	Tons
			8.5 HSPF	
HE-9		≥ 65,000 Btu/hr (5.4 tons) < 135,000 Btu/hr (11.3 tons)	11.6 EER	
			15.1 IEER	
			3.5 COP	
HE-10		≥ 135,000 Btu/hr (11.3 tons) < 240,000 Btu/hr (20 tons)	10.9 EER	
			14.3 IEER	
			3.4 COP	
HE-11		≥ 240,000 Btu/hr (20 tons)	10.4 EER	
			14 IEER	
			3.3 COP	
HE-12	Closed loop water source heat pump	≤ 17,000 Btu/hr (1.4 tons)	11.5 EER	Tons
HE-13		> 17,000 Btu/hr (1.4 tons), ≤ 65,000 Btu/hr (5.4 tons)	12.3 EER	
HE-14		> 65,000 Btu/hr (5.4 tons), ≤ 135,000 Btu/hr (11.3 tons)	12.3 EER	
HE-17	Package terminal air conditioner	< 7,000 Btu/hr	13.1 EER	Tons
HE-55		7,000 Btu/hr to 15,000 Btu/hr	11.8 EER	
HE-56		> 15,000 Btu/hr	10.5 EER	
HE-18	Package terminal heat pump	< 7,000 Btu/hr	13.1 EER	Tons
			3.6 COP	
HE-66		7,000 Btu/hr to 15,000 Btu/hr	11.8 EER	
			3.5 COP	
HE-67		> 15,000 Btu/hr	10.5 EER	
			3.4 COP	
HE-72	Ground-loop heat pump (GLHP)	< 135,000 Btu/hr (11.3 tons)	17 EER/3.5 COP	Tons
HE-73			19 EER/3.7 COP	
HE-74		< 135,000 Btu/hr (11.3 tons)	per 0.1 EER increase above 14.1 EER	Tons
HE-75			per 0.1 COP increase above 3.2 COP	
HE-76	Water loop heat pump (WLHP)	Varies	Varies	1,000 sq. ft.
HE-77	CAV to VAV	Varies	Varies	1,000 sq. ft.

HE-2 to HE-6, HE-70 – Unitary and split air conditioning systems

Rebates are available to install replacement air conditioning systems that meet or exceed qualifying cooling efficiency. They can be either split systems or single packaged units. Water-cooled systems, evaporative coolers and water source heat pumps are not eligible for this rebate, but may be eligible for a custom measure rebate. Split system efficiency must be for air handling and condensing unit combined. Units with capacity <5.4 tons operating on single-phase voltage do not qualify for this measure.

HE-7, HE-9 to HE-11 – Air source heat pumps

Rebates are available to install replacement air source heat pumps that meet or exceed qualifying cooling efficiency. Water-cooled systems, evaporative coolers and water source heat pumps are not eligible for this rebate, but may be eligible for a custom measure rebate. Units with capacity <5.4 tons operating on single-phase voltage do not qualify for this measure.

HE-12 to HE-14 – Closed loop water source heat pumps

Rebates are available to install replacement closed loop heat pumps that meet or exceed qualifying cooling efficiency.

HE-17 & HE-18, HE-55 & HE-56, and HE-66 & HE-67 – Packaged terminal AC and heat pump units (PTAC/PTHP)

Rebates are available to install replacement packaged terminal air conditioners and heat pumps that are through-the-wall, self contained units. The qualifying efficiencies are provided in the table at left.

HE-72 & HE-73 Ground-loop heat pumps – threshold approach

Rebates are available to install ground-loop heat pumps (GLHP) that replace existing GLHPs or air-source heat pumps. New GLHPs must have a capacity <135,000 Btu/hr. Must meet stated thresholds and cannot be combined with HE-74 and/or HE-75.

HE-74 & HE-75 Ground-loop heat pumps – incremental approach

Rebates are available to install ground-loop heat pumps (GLHP) that replace existing GLHPs or air-source heat pumps. New GLHPs must have a capacity <135,000 Btu/hr. Incentive is based on incremental improvement above 14.1 EER for HE-74 and incremental improvement above 3.2 COP for HE-75. Must not be combined with HE-72 or HE-73.

HE-76 – Water loop heat pumps (WLHP)

Rebates are available for the installation of a new water loop heat pump (WLHP) system or WLHP system replacing a constant volume reheat system. The WLHP system should consist of a series of water-to-air heat pumps servicing individual zones with heat pumps connected to a common water circulation loop. All installed heat pumps must meet individual efficiency requirements for their rated capacities. Rebates will be calculated per 1,000 sq. ft. of conditioned space in the facility. Fractional areas will be evaluated to two decimal places.

HE-77 – CAV to VAV

Rebates are available for the conversion of a constant air volume (CAV) building HVAC system to a variable air volume (VAV) building HVAC system. VAV upgrades should include the installation of an airside economizer, VFD(s) on the supply fan, and VAV reheat boxes at the zone level. Fractional areas will be evaluated to two decimal places. Applications claiming rebates for HE-77 do not qualify for rebates for HE-39 and/or HE-41.

HVAC electric specifications

HVAC controls

Measure ID	Equipment Type	Unit
HE-26	Hotel guest room energy management control (electric cooling/heat)	Room
HE-27	Hotel guest room energy management control (electric cooling/gas heat)	Room
HE-28	Web-based building automation system (reservation required)	1,000 sq. ft.
HE-29 & HE-59	Chilled water reset 5˚ or 10˚ – air/water cooled	Ton
HE-37	HVAC occupancy sensor	1,000 sq. ft.
HE-57	Chiller plant optimization	Ton controlled
HE-58	Optimum start	1,000 sq. ft.
HE-60	DDS/MZS to VAV	1,000 sq. ft.

HE-26 – Hotel guest room energy management control (electric cooling and electric heat)

Rebates are available for new sensors that control PTACs, heat pumps and other HVAC units for individual hotel rooms. Guest rooms must be controlled by automatic or key-based occupancy detectors. Replacement or retrofits of existing occupancy-based controls are not eligible. For multi-room suites, the rebate is per room controlled when a sensor is installed in each room.

HE-27 – Hotel guest room energy management control (electric cooling and gas heat)

Rebates are available for new sensors that control PTACs, heat pumps and other HVAC units for individual hotel rooms. Guest rooms must be controlled by automatic or key-based occupancy detectors. Replacement or retrofits of existing occupancy-based controls are not eligible. For multi-room suites, the rebate is per room controlled when a sensor is installed in each room.

HE-28 – Web-based energy management system (reservation required)

Rebates are available for installing a web-based energy management system in existing buildings that currently have no digital automated HVAC controls or have outdated pneumatic control systems with inoperable time control functions. Controlled spaces cannot be occupied 24/7. This rebate cannot be combined with rebates for chilled water reset with pump on/off control. Must include setback schedule and a scaled floor-plan with controlled areas highlighted. A minimum setback space temperature of at least 5˚ must be achieved when cooling.

HE-29 & HE-59 – Chilled water reset 5˚ or 10˚ – air and water cooled chillers

Rebates are available for retrofitting existing chilled water systems with chilled water reset controls that allow the chilled water temperature to increase by at least 5˚F or 10˚F during periods of low-flow (low load). Upgrades must include hardware installation for new controls. This measure is not eligible on newly installed chillers. This rebate is per ton of refrigeration and is based on the capacity of the chiller affected by the control upgrade.

HE-37 – HVAC occupancy sensor

Rebates are available for installing HVAC occupancy sensor controls used to reset space temperatures and reduce ventilation air supplied to individual zones when they are unoccupied. Cannot be combined with the demand control ventilation rebate. Fractional values are allowed for areas that are not multiples of 1,000 square feet. Floor plan must be submitted verifying square footage. These measures can be combined with measures for Interior lighting occupancy sensors (LO-60 to LO-62 and LO-63 to LO-65) if sensors are controlling both HVAC and lighting.

HE-57 – Chiller plant optimization (reservation required)

This measure covers the implementation of optimized chiller sequencing to existing chiller plants. There must be two or more chillers which operate with stand-alone controls pre-upgrade. The chilled water plant controller must be fully automated and programmed with each chiller's unique operating characteristics to optimize both full-load and part-load performance of the chiller, condenser water pumps, and towers as applicable. This rebate is only available to chillers with electrically operated compressors. Chillers providing cooling for HVAC and/or process purposes are eligible. Written overview of control strategy must be provided with application.

HE-58 – Optimum start (reservation required)

During optimal start morning warm-up, the supply fan shall run continuously and the heating or cooling shall be energized but the OA damper shall remain closed unless in economizer mode. Floor plans showing pertinent areas should be provided along with sequence of operation. Service contracts with an optimal start upgrade are not eligible. System must feature automated setback and/or setup capabilities at least five times weekly.

HE-60 – DDS/MZS to VAV (reservation required)

Must be converting a dual duct system/multi-zone system to a VAV system. The areas served by the air system must be conditioned spaces (both heated and air conditioned). At a minimum, variable frequency drives must be installed on all fans in the system and VAV boxes and reheat must be added to a minimum of four zones. The rebate cannot be combined with the rebate for VFD/VSD on HVAC Fans or HVAC Pumps. Adding a VFD and controls to a dual duct or multi-zone AHU does not qualify. Existing single zone air handling equipment does not qualify (i.e., classroom unit ventilators or fan coil units).

Other HVAC

Measure ID	Equipment Type	Unit
HE-41	Economizer	Ton
HE-42	Cool roof	1,000 sq. ft.
HE-43	High performance glazing in windows	100 sq. ft.
HE-44	Window film	100 sq. ft.
HE-45	EC motors on small commercial furnaces replacing non-EC motors	HP
HE-46	Efficient chilled water pump	Pump HP
HE-47	Efficient hot water pump	Pump HP
HE-39	Variable frequency drive – VAV supply or return air fan	Fan HP
HE-40	Variable frequency drive – secondary chilled water pump	Pump HP
HE-51	Variable frequency drive hot water pump	Pump HP
HE-52	Variable frequency drive primary chilled water pump	Pump HP
HE-53	Variable frequency drive cooling tower fan	Fan HP
HE-54	Variable frequency drive condenser water pumps	Pump HP
HE-69	Variable frequency drive HVAC fans	Fan HP
HE-61 to HE-65	High volume, low speed fans	Fan
HE-68	Original double hung window with low U storm	100 sq. ft.

HE-41 – Economizer

Rebates are available for retrofitting an existing HVAC system having a fixed outdoor air setting to include air-side economizers.

HVAC electric specifications

HE-42 – Cool roof

Rebates are available for upgrading existing roofs to cool roofs that have a solar absorptance of ≤ 0.3 (reflectance of ≥ 0.7) and that are installed over an electrically air conditioned area. Fractional values are allowed for areas that are not multiples of 1,000 square feet. Floor plan must be submitted verifying square footage.

HE-43 – High performance glazing in windows

Rebates are available for high performance glazing having an east, west or southern exposure and a minimum 5-year manufacturer's warranty. Glazing must replace clear double-pane glass or lesser performing glazing. The new glazing must have a solar heat gain coefficient (SHGC) value of ≤ 0.39 and a U-value of ≤ 0.57. The space upgraded with the glazing must be an electrically air conditioned area. To convert shading coefficient (SC) to SHGC, multiply SC x 0.87. If SC is given in percent form, convert it to decimal form before multiplying. Fractional values are allowed for areas that are not multiples of 100 square feet. Documentation must be submitted verifying square footage.

HE-44 – Window film

Rebates are available for film applied to windows having an eastern, western, or southern exposure and a minimum 5-year manufacturer's warranty. Film must be applied to clear double-pane glass or lesser performing glazing. The installed window film must have a SHGC value of ≤ 0.39 and a U-value of ≤ 0.72. The space upgraded with the glazing must be an electrically air conditioned area. To convert SC to SHGC, multiply SC x 0.87. If SC is given in percent form, convert it to decimal form before multiplying. Fractional values are allowed for areas that are not multiples of 100 square feet. Documentation must be submitted verifying square footage.

HE-45 – EC motors on small commercial furnaces replacing non-EC motors

Rebates are available for replacing a shaded pole or PSC (permanent split capacitor) motor with an ECM (electronically commutated motor) on a small commercial furnace. Qualifying motors should be 7.5 hp or less. An ECM on a unit ventilator or fan coil unit are also eligible for this measure.

HE-46 – Efficient chilled water pump

Rebates are available for high efficiency chilled water pumps. Pump performance curve must indicate that the pump meets a minimum efficiency of 75%. Pumps must operate at least 2,000 hours per year. Redundant or back-up pumps are not eligible.

HE-47 – Efficient hot water pump

Rebates are available for high efficiency hot water pumps. Pump performance curve must indicate that the pump meets a minimum efficiency of 75%. Pumps must operate at least 2,000 hours per year. Redundant or back-up pumps are not eligible.

HE-39 – Variable frequency drives – VAV supply and return air fans

Rebates are available for adding VFD to existing supply and return air fans of VAV comfort cooling air handling systems. Redundant or back-up fans are not eligible. VFDs on new equipment are not eligible for this rebate. The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as inlet vanes and bypass dampers. Rebate is per horsepower (HP) of the supply or return air fan. Eligible for new construction for the following:

1. DX cooled AHU ≤ 65,000 Btu/h
2. Chilled water AHU fan motor ≤ 5 hp
3. Evaporatively cooled AHU with fan motor ≤ 1/4 hp

HE-40 – Variable frequency drives – secondary chilled water pumps

Rebates are available for adding VFD to existing secondary chilled water pumps of comfort cooling chilled water systems having a primary-secondary pumping arrangement. Redundant or back-up pumps are not eligible. VFDs on new equipment are not eligible for this rebate. The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as throttling valves. Eligible for new construction if total system is <10 hp.

HE-51 – Variable frequency drives for hot water pumps

Rebates are available for converting constant flow hot water systems for space heating to variable flow systems by adding VFD to existing hot water pumps. The existing 3-way valves must be converted to or replaced with 2-way valves. VFDs added to redundant or back-up pumps are not eligible. Eligible for new construction if total pump system < 10 hp.

HE-52 – Variable frequency drives for primary chilled water pumps

Rebates are available for converting constant flow chilled water systems for space cooling to variable flow systems by adding VFD to existing primary chilled water pumps. Conversions of both primary only and primary-secondary systems are eligible. Any existing 3-way valves must be converted to or replaced with 2-way valves. Redundant or back-up pumps are not eligible. Eligible for new construction if total pump system power < 10 hp.

HE-53 – Variable frequency drives for cooling tower fans

Rebates are available for replacing ON/OFF cycled cooling tower fan control with variable speed fan control by adding variable frequency drives VFD to existing cooling tower fans. The following are not eligible for this rebate: upgrades to towers with 2-speed motors or adjustable pitch fans; redundant or back-up tower fans; and integrated VFDs on new equipment. For multi-cell towers, rebate is per the combined horsepower (hp) of all motors to which a VFD is added.

HE-54 – Variable frequency drives for condenser water pumps

Rebates are available for converting constant flow HVAC condenser water pumps to variable flow systems by adding VFD to existing condenser water pumps. Any existing 3-way valves must be converted to or replaced with 2-way valves. Redundant or back-up pumps are not eligible. Eligible for new construction if total pump system power < 10 hp.

HE-69 – Variable frequency drives for HVAC fans – fixed speed, tier 1 (51-54 Hz)

Available for installing a VFD on new or existing HVAC fans.

- Fan motor must operate at least 2,000 hrs./yrs.
- Must be set at a fixed speed between 51 and 54 Hz.
- Rebate unit is per controlled HP.
- The replacement of existing VFDs or installation of VFDs on redundant or back up HVAC fans do not qualify for rebates.
- Pre-Notification is required on fan motors greater than 50 hp.

HE-61 to HE-65 – High-volume, low-speed fans

This measure applies to 16-24 foot diameter, horizontally mounted ceiling high-volume low-speed (HVLS) fans which replace multiple non-HVLS fans that have reached the end of useful life in commercial or industrial applications.

HE-68 – Original double hung window with low U storm

Rebates are available for rehabilitating double hung storm windows with low U values. The SHGC value must improve from ≥0.73 to ≤0.27. The U-value must improve from ≥1.27 to ≤0.21. Fractional values are allowed for areas that are not multiples of 100 square feet. Documentation must be submitted verifying square footage.

HVAC electric specifications

Chillers

			Must exceed ASHRAE 90.1-2013 Baseline (Units kW/ton)			
			Path A		Path B	
	Type	Size Category (Tons)	Full Load	IPLV	Full Load	IPLV
CH-200 & CH-201, CH-204 & CH-205	Air cooled reciprocating, screw or scroll	< 150	1.19	0.88	1.24	0.76
CH-202 & CH-203, CH-206 & CH-207		≥ 150	1.19	0.86	1.24	0.75
CH-208 & CH-209	Water cooled, screw or scroll	< 75	0.75	0.60	0.78	0.50
CH-210 & CH-211		≥ 75 and < 150	0.72	0.56	0.75	0.49
CH-212 & CH-213		≥ 150 and < 300	0.66	0.54	0.68	0.44
CH-214 & CH-215		≥ 300 and < 600	0.61	0.52	0.63	0.41
CH-216 & CH-217		≥ 600	0.56	0.50	0.59	0.38
CH-218 & CH-219	Water cooled centrifugal	< 150	0.61	0.55	0.70	0.44
CH-220 & CH-221		≥ 150 < 300	0.61	0.55	0.64	0.40
CH-222 & CH-223		≥ 300 and < 400	0.56	0.52	0.60	0.39
CH-224 & CH-225		≥ 400 and < 600	0.56	0.50	0.59	0.38
CH-226 & CH-227		≥ 600	0.56	0.50	0.59	0.38

CH-200 to CH-227 – Chillers

Rebates are available for chillers of the following types: air-cooled reciprocating, air-cooled screw or scroll, water-cooled screw or scroll, and water-cooled centrifugal.

Each application with a new chiller must complete and submit the new chiller addendum along with the application. Along with the chart above of qualifying efficiencies, the New Chiller Addendum explains the methodology of rebate payments.

HVAC Tune-Ups

Measure ID	Equipment Type	Unit
HE-48	Refrigerant charging correction on RTU AC	Ton
HE-49	DX condenser coil cleaning	Ton
HE-50	Chiller tune-up	Ton

HE-48 – Refrigerant charging correction on RTU AC

A rebate is available for adjusting undercharged refrigerant so that it is within manufacturer specifications.

The AC must meet the following criteria:

- Must be a rooftop unit meeting minimum efficiency per ASHRAE 90.1 2013 Table 6.8.1-1 (see appendix in back)
- Cannot be located on a grocery, high school, or large office
- Measurements must show that the refrigerant charge is ±20% rated charge

HE-49 – DX condenser coil cleaning

A rebate is available for cleaning direct expansion condenser coils.

The coil must meet the following conditions:

- Must not have been cleaned within the past three years.
- Cleaning must be done by a qualified technician following standard practices.

HE-50 – Chiller tune-up

A rebate is available for the tune-up of any air-cooled or water-cooled chiller greater than 20 tons with an electrically operated compressor. This rebate is available once in a 24-month period. Each individual chiller is considered one unit. Please be sure to complete the Chiller Tune-Up Checklist.

Cooling service tune-ups must include the following maintenance items, if applicable:

- Inspect and correct oil level and pressure at full load operation
- Clean the air-cooled condenser coil
- Check and adjust the system pressure
- Inspect and/or replace filter
- Inspect and/or replace belt
- Check and repair the electrical contactors
- Check and repair evaporator condition
- Validate compressor amp draw
- Validate supply motor amp draw
- Validate condenser fan(s) amp draw
- Check liquid line temperature
- Check suction pressure and temp
- Check refrigerant temperature and pressure
- Validate low-pressure controls
- Validate high-pressure controls
- Validate crankcase heater operation
- Clean water cooled chiller condenser tubes
- Clean water cooled chiller evaporator tubes (if performance warrants)
- Check and repair economizer operation
- Validate sub-cooling and superheat
- Validate suction temperature and pressure
- Inspect all refractory
- Patch and wash coat as required
- Check safety controls
- Check for proper venting
- Lubricate all motors
- Check coupling alignment

Process electric specifications

Compressed air

Measure ID	Equipment Type		Unit
CA-24	Compressed air pressure flow controller		HP
CA-25 & CA-41	Compressed air audit with leak repair		CFM
CA-26	VSD air compressor 50 - 500 HP	2,000 - 6,000 hours of use	HP
CA-43		> 6,000 hours of use	HP
CA-34	VSD air compressor < 50 HP	1 shift (2,080 average hrs/yr)	HP
CA-51		2 shift (4,160 average hrs/yr)	HP
CA-44		3 shift (6,240 average hrs/yr)	HP
CA-52		24/7 (8,760 hrs/yr)	HP
CA-46	VSD air compressor (multiple-compressor systems) 50 - 500 HP	4,000 - 7,200 hours of use	HP
CA-45		> 7,200 hours of use	HP
CA-47	VSD retrofit air compressor (multiple-compressor systems) 50 - 500 HP	> 7,200 hours of use	HP
CA-48	Two stage rotary screw air compressor (VSD/VD/LNL type)	≥ 4,000 hours of use	HP
CA-49	Low pressure drop air filters ≥ 50 HP		HP
CA-50	Air compressor outdoor air intake ≥ 50 HP		HP
CA-27	Cycling Compressed air dryers	Refrigerated, cycling thermal mass	CFM
CA-28		Refrigerated, variable speed compressor	CFM
CA-29		Refrigerated, digital scroll	CFM
CA-30	Refrigerated air dryer replacing desiccant air dryer		SCFM
CA-31	No-loss condensate drains*		Drain
CA-32	Compressor air storage tank		HP
CA-33	Variable displacement air compressor		HP
CA-35	Heated desiccant air dryers	VSD compressor	SCFM
CA-36		VD compressor	SCFM
CA-37		LNL compressor	SCFM
CA-38	Blower purge desiccant air dryers	VSD compressor	SCFM
CA-39		VD compressor	SCFM
CA-40		LNL compressor	SCFM
CA-81	Dew point controls for desiccant air dryers		SCFM

*Cannot be integrated into new equipment

CA-53 to CA-68 – Compressed air engineered nozzle

Rebates are available for engineered nozzles that replace simple open pipe/tube assemblies connected to a compressed air system. Nozzles must be in use 1,000 hours or more per year. The engineered nozzles must be between 1/8 inch and 1/2 inch in diameter. Air jets and nozzles must have a standard cubic feet per minute (SCFM) rating at 80 psig of less than or equal to the values in Table 2.

Table 1: Qualifying SCFM ratings for engineered nozzles

Size (inch)	1/8	1/4	3/8	1/2
SCFM	10	18	35	60

CA-24 – Compressed air pressure flow controller

Rebates are available for installing a pressure flow controller downstream from the storage/receiver tank in compressed air systems. The controller must be installed on a main pressure header. Replacement of an existing controller does not qualify. The air compressor must be at least 50 hp. There must be at least 5 psig reduction between the discharge pressure from the air compressor and the discharge pressure from the pressure flow controller.

CA-25 & CA-41 – Compressed air audits with leak repair

Rebates are available for compressed air audits that result in repair of air leaks. Audit must consist of compressor kW, pressure and flow rate, as well as a leak detection survey. Survey must identify system leaks by location (or tag number) and size (cfm). Amount of leaks repaired must be ≥ 50% of the total leakage rate (cfm). Compressed air systems must be electrically driven and must have a rated power of at least 50 hp. The air compressor must have at least 2,000 annual run hours (excluding back-up). In the case of a multiple compressor system where the trim compressor is VSD, apply via measure CA-25 (VSD air compressor). The complete audit report with leak location, size and repair information must be submitted with final application. Rebate is available once per year.

CA-26 & CA-43 – VSD air compressors (50-500 HP) (single air compressor systems)

Existing compressor must be a screw compressor to qualify. Systems containing centrifugal compressors do not qualify for this measure, but do qualify for custom incentives. Rebate is for a single compressor system (i.e., the upgraded system only has one air compressor, which is a VSD). A single VSD compressor may replace multiple compressors. Rebates are available for variable speed screw air compressors from 50 to 500 hp that replace constant speed air compressors which use inlet modulation or load/no load control. Adding a VSD to an existing compressor does not qualify. Centrifugal compressors do not qualify for this measure but may qualify for custom incentives. Only one VSD compressor per compressed air system is eligible. Replacement of existing VSD air compressor and VSD air compressor of equal or lesser HP is not eligible for this rebate. If a larger VSD air compressor is installed, the difference in horsepower may qualify for a rebate. Redundant or back-up compressors are not eligible. Annual run hours determine which measure the compressor is eligible for. Instead of receiving the prescriptive rebate, a customer may instead submit a VSD compressor project as a custom measure but then must fulfill all pre-install and post-install data requirements.

CA-34, CA-44, CA-51 & CA-52 – VSD air compressor (< 50 HP)

Rebate is for new VSD air compressors under 50 hp. Back-up and redundant air compressors are not eligible for this rebate. Air compressors on multiple-compressor systems must operate the new VSD air compressor 8,320 hours per year for 24/7, 6,240 hours per year for 3-shift, 4,160 hours per year for 2-shift, and 2,080 hours per year for a single shift, and be set up to control load variations and not be base loaded. Only one compressor on a compressed air system (connected by piping) can qualify for this VSD rebate. Existing reciprocating compressor replacements must prove the duty cycling is at least 60% to qualify for this measure. Annual run hours determine which measure the compressor is eligible for.

Process electric specifications

CA-45 & CA-46 – VSD air compressor (multiple-compressor systems)

Must be a variable speed screw compressor replacing a screw compressor with modulating control or LNL control in a multiple air compressor system. Systems containing centrifugal compressors do not qualify for this measure, but do qualify for custom incentives. For new VSD compressors only, compressors must be between 50-500 hp. A multiple air compressor system is defined as more than one air compressor being required to operate simultaneously to meet the facility's compressed air demand, excluding redundant or standby air compressors. Installation of VSD to an existing compressor and redundant or back up VSD air compressors do not qualify. Annual run hours determine appropriate measure eligibility.

CA-47 – Retrofit air compressor (multiple-compressor systems)

This measure is for installing a VSD on an existing constant speed screw compressor with either inlet modulation or load/no load control. Systems containing centrifugal compressors do not qualify for this measure, but do qualify for custom incentives. Retrofitting for VSD compressors must be between 50-300 hp. A multiple air compressor system is defined as more than one air compressor being required to operate simultaneously to meet the facility's compressed air demand, excluding redundant or standby air compressors. Installation of new VSD air compressor, redundant or backup compressors does not qualify. Annual run hours determine appropriate measure eligibility.

CA-48 – Two stage rotary screw air compressor (VSD/VD/LNL Type)

Air compressors on multiple-compressor systems must operate the new, two-stage, air compressor at least 4,000 hours annually and must be ≥ 50 hp. This measure may be combined with any applicable VSD or VD air compressor measure.

CA-49 – Low pressure drop air filters

Available to prevent the over-filtering of air compressor systems. The potential energy savings is attributed from the over-pressuring of the compressed air to compensate for higher filtration. Compressed air system HP must be ≥ 50 hp. The new filter must be a mist eliminator style and replace a standard coalescing filter.

CA-50 – Air compressor outdoor air intake

Available to customers whose existing air compressor(s) current air inlet comes from the ambient conditioned (heated) space and are proposing to permanently hard duct the air inlet directly from the outside. Compressed air system HP must be ≥ 50 hp and operate at ≥ 80 psig.

CA-27 to CA-29 – Efficient compressed air dryers

Rebates are available for replacing refrigerated, non-cycling, compressed air dryers with efficient refrigerated dryers. The new compressed air dryer may use cycling thermal mass, variable speed or digital scroll technology. The new dryer may be free-standing or integral to the air compressor as a factory-installed option.

CA-30 – Refrigerated air dryer replacing desiccant air dryer

Rebates are available for replacing an existing desiccant air dryer with a refrigerated air dryer. The compressed air system must be 50 hp or greater. The new dryer may be free-standing or integral to the air compressor as a factory-installed option.

CA-31 – No-loss condensate drains

Rebates are available for replacing existing timed or manual drains with no-loss condensate drains on compressed air systems. The drain must continuously monitor the level of condensate and drain it without also leaking compressed air. Manual drains, timed drains, and standard factory-installed drains in equipment, such as compressor and dryers, are not eligible.

CA-42 – Compressed air storage tank

Rebates are available for the installation of a compressed air storage tank to augment the capacity of trim (not base-load) compressors. Tank must be supplied by rotary screw compressors operating at greater than 90 psig. Storage capacity must be increased from ≤ 1 gal/CFM to ≥ 3 gal/CFM of the trim compressor. Upgrades from ≤ 1 gal/CFM to ≥ 5 gal/CFM of the trim compressor are eligible for both CA-32 and CA-42. Installation of tanks to support base-loaded compressors is not eligible.

Example

Before retrofit:
(1) 100 CFM trim compressor with (1) 100 gallon tank = 1 gal/CFM
After retrofit:
(1) 100 CFM trim compressor with (1) 400 gallon tank = 4 gal/CFM
Qualifies for CA-42 only.

CA-32 – Increased compressed air storage tank

Rebates are available for the installation of a compressed air storage tank to augment the capacity of trim (not base-load) compressors. Tank must be supplied by rotary screw compressors operating at greater than 90 psig. Storage capacity must be increased from ≤ 3 gal/CFM to ≥ 5 gal/CFM of the trim compressor. Upgrades from ≤ 1 gal/CFM to ≥ 5 gal/CFM of the trim compressor are eligible for both CA-32 and CA-42. Installation of tanks to support base-loaded compressors is not eligible.

Example

Before retrofit:
(1) 100 CFM trim compressor with (1) 200 gallon tank = 2 gal/CFM
After retrofit:
(1) 100 CFM trim compressor with (1) 500 gallon tank = 5 gal/CFM
Qualifies for CA-32 only.

CA-33 – Variable displacement air compressor

Rebates are available for variable displacement screw air compressors that replace screw air compressors which use modulating control or load/no-load control. The variable displacement compressor must be set up to control load variations (non-base load). Only one variable displacement compressor on a system is eligible. The air compressor system must be ≥ 50 hp. Redundant or back-up compressors are not eligible. Instead of receiving the prescriptive rebate, a customer may instead submit a variable displacement compressor project as a custom measure, but then must fulfill all pre-install and post-install data requirements.

CA-35 to CA-37 – Heated desiccant air dryers

Rebates are available for replacing a heatless desiccant air dryer with a desiccant air dryer that uses a heater to pre-heat the desiccant purge air.

CA-38 to CA-40 – Blower purge desiccant air dryers

Rebates are available for replacing a heatless desiccant air dryer with a desiccant air dryer that uses a blower to purge the desiccant material instead of compressed air.

CA-81 – Dew point controls for desiccant air dryers

Rebates are available for installation of dew point controls on new or existing desiccant dryers. Dryers must be installed on a load/no load, variable displacement, or VSD compressor. Dryers installed on modulating (inlet modulating) compressors do not qualify. When installing a new heated or blower purge desiccant dryer, this measure may be combined CA-35 to CA-37 or CA-38 to CA-40, respectively. This measure cannot be combined with CA-27 to CA-29 or CA-30.

Process electric specifications

Variable frequency drive (VFD) for process

Measure ID	Equipment Type	Const./Var.	Unit
PE-9 to PE-20	VFDs for process pumps	Variable	HP controlled
PE-97	VFDs for fixed speed process pump control	Constant	
PE-21	VFDs for process fans ≤ 50 HP	Variable	
PE-138 & PE-140	VFDs for fixed speed process fan control	Constant	
PE-139 & PE-141	ECM for fixed speed process fans	Constant	
PE-137	VFDs for pool pump	Variable	
PE-22	VFDs for CRAC supply fans	Variable	
PE-73	VFDs on process cooling tower fans	Variable	

PE-9 to PE-20 – VFDs for process pumps

Rebates are available for retrofitting existing process (non-HVAC) pumps with VFDs. Pumps must operate at least 2,000 hours per year. VFDs for redundant or back-up pumps are not eligible. VFDs replacing existing VFDs are not eligible. The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as throttling valves.

PE-97 – VFDs for fixed speed process pump control

VFD must be used in conjunction with a process (non-HVAC) pumping application. Redundant or backup units do not qualify. Replacement of functioning existing VFDs does not qualify. VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signals. The proposed VFD frequency must be reduced to 54 Hz or less. The system controlled must have significant load diversity that will result in savings through motor speed variation. Copies of specification sheets and invoices that clearly show the drive's size are required.

PE-21 – VFDs for process fans

Rebates are available for retrofitting existing process (non-HVAC) fans ≤ 50 hp with VFDs. The installation must accompany the permanent removal or disabling of any throttling devices. VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal. VFDs for redundant or back-up fans are not eligible.

PE-138 & PE-140 – VFDs for fixed speed process fans, tier I and II

Rebates are available for the installation of VFDs on new or existing fixed speed process fans.

- Fan motor must operate at least 2,000 hours/year.
- Must be automatically controlled or at a fixed speed ≤54 Hz.
- Rebate unit is per controlled HP.
- Replacement of existing VFDs, or installation of VFDs on redundant or back-up motors do not quality for this rebate.
- Pre-notification is required for fan motors >50 hp.

PE-139 & PE-141 – ECMs for fixed speed process fans, tier I and II

Rebates are available for the installation of ECMs for process fans.

- Fan motor must operate at least 2,000 hours/year.
- Must be automatically controlled or at a fixed speed ≤54 Hz.
- Rebate unit is per controlled HP.
- Nominal power of the installed ECM must be between 1 - 10 hp.
- ECM must be nominal 1800 RPM and meet or exceed IEC IE4 standard, 2-pole efficiency.

PE-137 – VFDs for pool pumps

Rebates are available for the installation of VFDs on circulating pool pumps. The pump must operate year-round. Seasonal applications do not qualify. Redundant, backup and existing VFD replacement do not qualify. Pumps must be <50 hp. Larger are eligible for custom.

PE-22 – VFDs for computer room air conditioning (CRAC) supply fans

Rebates are available for installing VFDs on existing telecommunications or computer room air conditioning (CRAC) units. The units must operate continuously all year. Replacement of existing VFDs is not eligible. Redundant or backup units are not eligible.

PE-73 – VFDs on process cooling tower fans

Available for installing a VFD on new or existing process cooling tower fans.

- Fan motor must operate at least 2,000 hours/year.
- Must be automatically controlled (i.e., basin temperature) or at a fixed speed ≤54 Hz.
- Rebate unit is per controlled HP.
- The replacement of existing VFDs, or installation of VFDs on redundant or back-up cooling towers do not quality for this rebate.
- Pre-notification is required for fan motors >50 hp.

High Efficiency Pumps

		Constant	Variable			
Measure ID	Pump Class	All HP	1-1.9 HP	2-3 HP	3.1-5.9 HP	6-50 HP
PE-64 & PE-65	ESCC, 1800	1.00	0.55	0.53	0.51	0.49
	ESCC, 3600	0.96	0.57	0.55	0.54	0.51
	ESFM, 1800	0.98	0.55	0.53	0.52	0.49
	ESFM, 3600	0.99	0.58	0.55	0.51	0.51
	IL, 1800	0.99	0.54	0.55	0.51	0.49
	IL, 3600	0.98	0.56	0.57	0.54	0.51
	RSV, 1800	0.98	0.56	0.55	0.52	0.50
	RSV, 3600	0.98	0.56	0.55	0.52	0.50
	VT-S, 1800	0.96	0.66	0.63	0.60	0.60
	VT-S, 3600	0.96	0.66	0.63	0.60	0.60

PE-64 & PE-65 – High efficiency pumps

Rebates are available for high efficiency clean water pumps (i.e., for HVAC, irrigation, & municipal service) with a Pump Efficiency Index (PEI) that is less than or equal to the values in the table. Energy savings and rebates are increased for each 0.01 below the baseline PEI value for that pump. Pumps are rated as either constant load with a PEICL or variable load with PEIVL or both. Variable load PEIVL rated pumps cannot be used in a constant speed system unless it has a PEICL rating that also meets the baseline requirements. Changing systems from constant speed to variable speed are not considered for this measure, those are addressed by measure PE-97.

Process electric specifications

Miscellaneous process

Measure ID	Equipment Type			Unit
PE-23	Industrial 3-phase HF battery charger	1-shift operation		Charger
PE-24		2-shift operation		Charger
PE-25		3-shift operation		Charger
PE-26	Electrically commutated plug fans	In-cabinet		Fan
PE-27		Under-cabinet		Fan
PE-63	Process cooling ventilation reduction			CFM reduced
PE-31	Barrel wraps for injection molders & extruders			Square foot
PE-32	Insulated pellet dryer ducts	3" diameter		Linear foot
PE-33		4" diameter		Linear foot
PE-34		5" diameter		Linear foot
PE-35		6" diameter		Linear foot
PE-36		8" diameter		Linear foot
PE-37	Tank insulation – 1"	Low temp (120°F-170°F)		Square foot
PE-38		High temp (> 170°F)		Square foot
PE-39	Tank insulation – 2"	Low temp (120°F-170°F)		Square foot
PE-40		High temp (> 170°F)		Square foot
PE-41	Electric motors replacing pneumatic (air) motors			HP
PE-42	High efficiency welders - inverter style (reservation required)			Welder
PE-43	Air blowers replacing compressed air blow-off			HP
PE-44	Electric tools replacing pneumatic (air) tools			Tool
PE-49	Fiber laser cutter replacing CO_2 laser cutter	≥ 2,500 to < 4,000 hrs./yr.		kW
		≥ 4,000 hrs./yr.		kW
PE-46	All-electric injection molding machines replacing hydraulic injection molding machines			Ton
PE-47	Hybrid injection molding machines replacing hydraulic injection molding machines			Ton
PE-48	Cordless electric tools replacing pneumatic (air) tools (reservation required)			Tool
PE-67	VSD plastic injection molding machine	Constant displacement	1,600 - 3,000 hrs/yr	HP
PE-68			3,001 - 5,000 hrs/yr	HP
PE-69			5,001 - 8,760 hrs/yr	HP
PE-70		Variable displacement	1,600 - 3,000 hrs/yr	HP
PE-71			3,001 - 5,000 hrs/yr	HP
PE-72			5,001 - 8,760 hrs/yr	HP
PE-74 to PE-92; PE-95 to PE-101	ENERGY STAR UPS			kVA
PE-128	Laboratory - VAV Hood			Lin. ft. of sash

PE-23 to PE-25 – Industrial 3-phase high frequency battery chargers

Rebates are available for replacing ferroresonant and silicon controlled rectifier chargers with new 3-phase high frequency chargers. The new chargers must have a minimum power conversion efficiency of 92% and must be utilized at least 5 days per week, one 8-hour shift per day, year round. This measure is available for battery chargers for electric vehicles, such as forklifts, golf carts and automatic guided vehicles, etc. Installation of chargers for electric passenger vehicles is not eligible under this measure.

PE-26 & PE-27 – Electronically commutated plug fans

Rebates are available for plug fans with electronically commutated motors that replace constant speed, belt-driven centrifugal fans and motors in floor-mounted, down-flow computer room air conditioning units serving data centers. Fans may be located in-cabinet or under-cabinet. Plug fans with electronically commutated motors for other unit configurations are not eligible for this rebate, but may be eligible for custom measure rebates.

PE-63 – Process cooling ventilation reduction (CFM)

Reduced volume flow rate must exceed 5,000 CFM and proposal must be authored by a Professional Engineer (PE) Licensed in the State of Michigan. Operational performance verification (complete pre and post construction volume flow rate testing) by a certified Testing, Adjusting and Balance Agent is required. Systems designed to allow the carbon dioxide levels in occupied spaces to exceed a maximum level of 1,200-ppm do not qualify. The rebate is limited to 50% of the total installation cost. Total installation costs may include outside engineering and data collection costs. Reservation applications must include a one-page narration of the project's proposed scope of work.

PE-31 – Barrel wraps for injection molders and extruders

Rebates are available for installing insulating blankets on the barrels of extruding or injection molding machines. Blankets must be installed on previously uninsulated barrels. Include summary sheet identifying machine, circumference of heater band, width between thermocouples and calculated blanket square footage.

PE-32 to PE-36 – Insulated pellet dryer ducts

Rebates are available for insulation placed on flexible ducts of pellet dryers. Insulation must be installed on previously un-insulated duct with a diameter of 3 to 8 inches.

PE-37 to PE-40 – Tank insulation

Rebates are available for adding insulation to existing hot-fluid storage or process tanks that are not insulated. Replacement insulation is not eligible. Tank must be uninsulated, bare or painted steel, and in use 8,760 hours/year. Insulation added must have an R-value of at least 3.2/inch. Fluid must be electrically heated.

PE-41 – Electric motors replacing pneumatic (air) motors

Rebates are available for electric-driven motors that replace existing pneumatic-driven motors. The pneumatic motors must be fed by a compressed air system and operate at least 400 hours per year. The compressed air branch headers must be demolished from the existing pneumatic motor back to the compressed air header.

PE-42 – High efficiency welders – inverter style (Reservation Required)

An rebate is available for replacing an existing transformer rectifier power source welder with a new inverter power sourced welder. The facility must operate the welding process a minimum of 1,000 hours per year.

Process electric specifications

PE-43 – Air blowers replacing compressed air blow-off

Rebates are available for air blowers that replace compressed air blow-off nozzles or pipes. The existing compressed air blow-off system must operate at a pressure ≥ 80 psig. The blowers must be used in a manufacturing production environment where the pressure conditions are ≤ 15 psig. The blow-off system must operate ≥ 1,000 hours per year.

PE-44 – Electric tools replacing pneumatic (air) tools

Rebates are available for electric-driven tools that replace existing pneumatic-driven tools. The pneumatic tools must be fed by a compressed air system and operate at least 400 hours per year. Qualified pneumatic tools for replacement must use ≥ 15 CFM per tool. Pneumatic bevellers, nailers, riveters and staplers do not qualify for this rebate. The compressed air branch headers must be demolished from the existing pneumatic tool back to the compressed air header. The electric tool must be corded and permanently installed.

PE-48 – Cordless electric tools replacing pneumatic (air) tools (Reservation Required)

Rebates are available for cordless tools that replace existing pneumatic-driven tools. To qualify for this rebate, the existing pneumatic hand tool must be replaced with a cordless electric (i.e. 18V lithium-ion brushless cordless) hand tool. The pneumatic tools must be fed by a compressed air system and operate a least 400 hours per year. Qualified pneumatic tools for replacement must use ≥ 15 CFM per tool. Pneumatic hand tools that do not qualify for this measure include: bevellers, nailers, riveters and staplers. Portable air hand tools or hand tools used for maintenance are not eligible for this rebate. The compressed air branch headers must be sealed without leaks from the existing pneumatic tool back to the compressed air header.

PE-45 & PE-49 – Fiber laser cutter replacing CO2 laser cutter

This rebate is for customers who are replacing their existing CO2 laser cutting equipment with new fiber laser cutting equipment. New installation of fiber lasers where there were not any CO2 lasers before also qualify. To qualify for this rebate, the laser must be cutting stock 0.2" (5 mm) or less, most of the time. The cutting equipment must operate at least two shifts (≥ 2,500 to < 4,000 hours annually) or three shifts (≥ 4,000 hours annually). Equipment must be mechanically cooled year-round to qualify. This rebate is based on the fiber laser's cutting power kW output.

PE-46 & PE-47 – All-electric or hybrid injection molding machines replacing hydraulic injection molding machines

This rebate is available for installation of hybrid or all-electric injection mold machines. Hybrid machines use an electric motor to directly drive the main screw; hydraulics are used for other functions. Hydraulic injection molding machines (baseline system) use a hydraulic motor for the main screw drive as well as hydraulic for other functions, such as clamping and ejection. VSD control or servo hydraulic control on hydraulic injection molding machines does not qualify. The new injection mold machines must be screw type and driven by servo motors. The proposed injection mold machine must operate at least 4,000 hrs/yr to qualify.

For retrofit applications, this measure only applies to the installation of a new all-electric or hybrid (servo hydraulic) injection molding machine to replace an existing hydraulic injection molding machine. Rebate is based on the metric tonnage of the new machine. Auxiliary hydraulic core puller packages are considered to be separate from the injection mold machine and are allowable for both all electric and hybrid injection machines. Qualifies for new construction and retrofit applications. Use standard tons to determine rebate.

PE-67 to PE-72 – VSD plastic injection molding machines

This rebate is available for installation of new servo hydraulic injection mold machines and variable speed motor retrofits for existing hydraulic injection molding machines. Hydraulic injection molding machines use a hydraulic motor for the main screw drive or for other functions such as clamping and ejection. This rebate cannot be combined with a new construction measure for either a hybrid or all electric machine. Provide confirmation of:

- Pump type on the HPU
- Whether it is constant displacement or variable displacement
- Annual hours of use

PE-74 to PE-92; PE-95 to PE-101 – ENERGY STAR UPS

Rebates are available for replacing an existing UPS (uninterrupted power supply) with an ENERGY STAR rated UPS.

Single Normal Mode UPS: A UPS that functions in Normal Mode within the parameters of only one set of input dependency characteristics. For example, a UPS that functions only as a VFI.

Multiple Normal Mode UPS: A UPS that functions in Normal Mode within the parameters of more than one set of input dependency characteristics. One of the modes must be VFD. For example, a UPS that can function as either VFI or VFD.

VFD: Voltage and frequency dependent

VFI: Voltage and frequency independent

VI: Voltage independent

PE-128 – Laboratory - VAV hood

Rebates are available for the installation of new lab hoods with variable flow rate exhaust systems. Fume hood exhaust should be controlled by the position of the sash. Rebate amount will be determined based on the nominal width in linear feet of the sash.

Telecommunication specifications

Computer room air conditioning units

Measure ID	Equipment Type		Unit
PE-98 & PE-99	Hot aisle cold aisle configuration 10°F return air increase	Air cooled	MBH
PE-100 & PE-101		Glycol cooled	
PE-102 & PE-103		Water cooled	
PE-104 & PE-105	Hot aisle cold aisle configuration 5°F return air increase	Air cooled	MBH
PE-106 & PE-107		Glycol cooled	
PE-108 & PE-109		Water cooled	
PE-110 to PE-112	CRAC economizer	Air cooled	MBH
PE-113 to PE-115		Glycol cooled	
PE-116 to PE-118		Water cooled	
PE-119 to PE-121	High efficiency CRAC	Air cooled	MBH
PE-122 to PE-124		Glycol cooled	
PE-125 to PE-127		Water cooled	
PE-134	Computer room air side heat exchanger	< 65 MBH	MBH
PE-135		65 - 240 MBH	
PE-136		> 240 MBH	

PE-98 to PE-109 – Computer room hot aisle cold aisle configuration

This measure describes the efficiency benefits of increasing the return air temperature of computer room air conditioning (CRAC) units. Increasing the return air temperature can be accomplished through various means of strategically controlling the cooling air flow to optimize equipment heat rejection and eliminate supply air "short circuiting." This can be achieved by arranging server racks into parallel rows and designating hot and cold aisles.

Table 2: Hot Aisle Cold Aisle Estimated Energy Savings

Equipment Type	Rating condition	AES 5°F KWh/MBH	AES 5°F KW/MBH	AES 10°F KWh/MBH	AES 10°F KW/MBH
Air cooled	Class 1	62.93	0.0072	115.8	0.0132
Water cooled		55.20	0.0063	101.6	0.0116
Glycol cooled		66.59	0.0076	122.6	0.0140
Air cooled	Class 2	49.75	0.0057	91.55	0.0105
Water cooled		46.62	0.0053	85.79	0.0098
Glycol cooled		54.72	0.0062	100.7	0.0115

PE-110 to PE-118 – CRAC economizer – air, glycol or water cooled

This measure describes the replacement of computer room air conditioning (CRAC) units which run mechanical cooling year-round with CRAC units that employ free cooling economizers. The economizers will be pumped refrigerant based. When outdoor temperatures are below a certain value (35°F for class 1, 45°F for class 2, and 55°F for class 3 are typical) refrigeration compressors are turned off and cool refrigerant is pumped from the condenser and diverted around the compressor for direct expansion (DX) equipment. Savings are based on compressors being turned off all winter, with a slight penalty for added fan and pumping energy.

PE-119 to PE-127 – High efficiency CRAC - air, glycol or water cooled

This measure describes the replacement of standard efficiency computer room air conditioning (CRAC) units with high efficiency units. CRAC units are rated in units of net Sensible COP (SCOP), which is the net sensible cooling coefficient of performance. This efficient unit savings are based upon a 10% increase in SCOP over the ASHRAE 90.1-2016 minimum efficiency requirements. This 10% improvement can be considered an incremental improvement to estimate the savings and cost associated with more efficient equipment. Operating or design return temperatures must be specified to select the appropriate Class of equipment. See tables below for equipment class and measure breakdown:

Table 3: CRAC Equipment Class

Equipment class	Proposed or Actual Operating Return Temperature
Class 1	Temperature ≤ 75°F
Class 2	75°F < Temperature ≤ 85°F
Class 3	85°F < Temperature ≤ 95°F

Table 4: High Efficiency CRAC Energy Savings Over Baseline

Equipment Type	Rating Condition	Average Class SCOP Base	SCOP New, 10% Above Base	Base Peak Demand, kW/MBH	Peak Demand Savings, kW/MBH	Annual Energy Savings, kWh/MBH
Air cooled	Class 1	2.00	2.20	0.0087	0.0087	65.94
Water cooled		2.28	2.51	0.0076	0.0076	57.84
Glycol cooled		1.89	2.08	0.0092	0.0092	69.78
Air cooled	Class 2	2.53	2.78	0.0068	0.0068	52.13
Water cooled		2.70	2.97	0.0064	0.0064	48.85
Glycol cooled		2.30	2.53	0.0075	0.0075	57.34
Air cooled	Class 3	2.56	2.82	0.0068	0.0068	51.52
Water cooled		2.65	2.73	0.0065	0.0065	49.77
Glycol cooled		2.25	2.47	0.0077	0.0077	58.61

PE-134 to PE-136 – Computer room air side heat exchanger

Rebates are available for the replacement of computer room air conditioning (CRAC) units which run mechanical cooling year-round with CRAC units that employ air-side heat exchangers. The critical load must be mechanically cooled by a DX cooling system. The air-to-air heat exchanger must be sized to match the cooling capacity of the mechanical DX system under design conditions. Only CRAC units required for winter cooling qualify for this measure. New units must have a sensible coefficient of performance (SCOP) that meets or exceeds the efficiencies listed in the table. Both installing new direct expansion CRAC units with economizers and retrofitting existing DX CRAC units qualify.

Telecommunication specifications

Rectifiers

Measure ID	Equipment Type			Unit
PE-130	Efficient rectifier - 200 Amps or less	94% efficiency	with CRAC economizer	output kW
PE-131			without CRAC economoizer	output kW
PE-132		97% efficiency	with CRAC economizer	output kW
PE-133			without CRAC economoizer	output kW

PE-130 to PE-133 – Efficient rectifier

Rebates are available for upgrading an existing rectifier with a high-efficiency version in a communications service provider (telecommunications, internet, or data center) or other similar, critical load facility. The rectifier(s) must be a component of a critical load and operate continuously to qualify. Rectifiers serving critical manufacturing loads are not eligible for this measure. The efficiency of the rectifiers in normal mode (not energy saving mode) must be 90% or less for the existing rectifier, and 94% or higher for the new rectifier. The rated output of the rectifier must be 200 amps or less to qualify. Projects that don't meet these requirements can be considered for custom measure rebates.

Sensors and Controls

Measure ID	Equipment Type	Unit
ME-1	Intelligent multi-socket surge protector	Protector
ME-2	PC network energy management controls	PC

ME-1 – Intelligent multi-socket surge protector

Rebates are available for surge protectors with built-in plug-load detection and control capabilities. The intelligent surge protector (power strip) must include at least one uncontrolled socket to which a primary device can be connected.

ME-2 – PC network energy management controls

Rebates are available for implementing a desktop personal computer (PC) power management program for networked PCs. The power management software must dynamically control processing units and monitors from one central location; must collect consumption data over time; and must offer a system-wide energy savings reporting function. Laptops, thin clients and other network devices are not eligible for this rebate.

Refrigeration specifications

Measure ID	Equipment Type	Unit
FE-20 & FE-21	Evaporator controls with demand frost for walk-in coolers/freezers	Ton
FE-22	Efficient oversized refrigeration condenser	Ton
FE-23	ECM motor for reach-in refrigerated display case (reservation required)	Motor
FE-24	ECM motor for walk-in cooler and freezer (reservation required)	Motor
FE-25	Evaporator fan motor control on ECM for walk-in coolers and freezers	Controller
FE-26	Evaporator fan motor control on PSC motors for walk-in coolers and freezers	Controller
FE-27	Walk-in cooler/freezer evaporator fan motor reduction (reservation required)	Fan
FE-28	Vertical night covers	Linear foot x hrs / day
FE-29 & FE-30	Strip curtains on walk-in cooler and freezer doors	Square foot
FE-31	Door gaskets on walk-in coolers and freezers	Linear foot
FE-32	Automatic door closers for refrigerated walk-in coolers/freezers doors (reservation required)	Door
FE-33 & FE-34	Reach-in refrigerated display case door retrofit (reservation required)	Linear foot
FE-51 to FE-58	Walk-in and case cooler permanent magnet synchronous motor	Motor

FE-20 & FE-21 – Evaporator controls w/ demand frost - walk-in coolers/freezers

Controls must have adaptive learning via a micro-processor or web-based controller. Control of the defrosting system is based on demand-initiation of defrost cycle. Manual control (always on) of evaporator fans does not qualify. Temperature in coolers must range from 33˚-50˚F and temperature in freezers must range from 0˚-32˚F.

FE-22 – Efficient oversized refrigeration condenser

Rebates are available for the **design and installation** of oversized condensers for multiplex refrigeration systems. A design reducing the approach (difference in exiting refrigerant and ambient dry bulb temperature) lowers the head pressure and conserves compressor horsepower (see Table 8). Provide documentation of condenser and compressor capacities.

Table 8: Oversized Condenser Approach Requirements

Condenser Category	Typical Design Approach	Approach (at or below)
Air cooled low temperature	10˚F	8˚F
Air cooled medium temperature	15˚F	13˚F
Evaporative cooled	20˚F	18˚F

FE-23 – ECM for reach-in refrigerated display case (reservation required)

Rebates are available for retrofitting existing refrigerated display cases with an ECM (electronically commutated motor) replacing an existing standard efficiency shaded pole (S-P) or permanent split capacitor (PSC) evaporator fan motor.

FE-24 – ECM for walk-in freezer and cooler (reservation required)

Rebates are available for an ECM replacing shaded pole motors or PSC motor on existing walk-in freezer and walk-in cooler evaporator fans.

FE-25 – Evaporator fan motor control on ECM for walk-in cooler or freezer

Rebates are available for controllers that lower fan air-flow and reduce motor power consumption by at least 75% during compressor off cycles. Each controller must control at least two evaporator fan motors with motor sizes of 1/20 hp or larger. Motor types must be ECM.

FE-26 – Evaporator fan motor control on PSC motors for walk-in cooler or freezer

Rebates are available for controllers that lower fan air-flow and reduce motor power consumption by at least 75% during compressor off cycles. Each controller must control at least two evaporator fan motors with motor sizes of 1/20 hp or larger. Motor types must be PSC motors.

FE-27 – Walk-in cooler/freezer evaporator fan motor reduction (reservation required)

Rebates are available for replacing existing evaporator fan/motor assemblies for walk-in coolers (medium-temperature) and freezers (low temperature). The installation must include evaporator or fan housing upgrades with similar cooling capacity in conjunction with the motor reduction. Blanking off existing fan ports or just reducing the motor HP of existing fans does not qualify. The existing evaporator fan motor must be at least 1/20 hp and less than 1/5 hp. The new evaporator fan/motor assemblies cannot increase the individual assembly's motor size. Rebate not applicable if the existing evaporator fan motor does not run at full speed all the time.

FE-28 – Vertical night covers

Rebates are available for vertical night covers installed on open refrigerated display cases. Rebate unit is per linear foot of cover per hours that the store is closed per day.

FE-29 & FE-30 – Strip curtains on walk-in cooler and freezer doors

Rebates are available for installing new strip curtains on doorways to walk-in coolers and freezers. Replacement of existing strip curtains is not eligible. Display cases are not eligible.

FE-31 – Door gaskets on coolers and freezers

Rebates are available for replacing existing leaky gaskets on doorways to coolers and freezers. An rebate is available every four years and for doors ≥ 5 feet in height. Site survey detailing total number of doors, location and number of leaky gaskets must be provided at reservation application. Stand alone ice and specialty coolers and freezers do not qualify.

FE-32 – Automatic door closers for refrigerated walk-in cooler/freezer doors (reservation required)

Rebates are available for installing an auto-closer to the main insulated opaque door(s) of a walk-in cooler or freezer. The auto-closer must firmly close the door when the door is within 1 inch of full closure. This measure has an eight-year life and is eligible for rebates every eight years.

FE-33 & FE-34 – Reach-in refrigerated display case door retrofit (reservation required)

Rebates are available for installing new vertical glass doors on existing open, vertical (or multi-deck), low temperature (LT) or medium temperature (MT) display cases, or for replacing existing, open, vertical (or multi-deck) display cases with new reach-in glass door display cases. The air temperature inside the cases must range from 0˚-32˚F (LT), or 33˚- 50˚F (MT). The case length must be equal to, or shorter than, the original case.

Refrigeration specifications

FE-51 to FE-58 – Walk-in and case cooler permanent magnet synchronous motor

Applies to replacement of existing standard efficiency shaded pole, permanent split capacitor, and EC motor evaporator fans. The replacement must be a permanent magnet synchronous motor (PMSM). Permanent magnet synchronous motors installed in new walk-in or case coolers do not qualify. This measure is intended for grocery stores, convenience stores, restaurants, deli, health care, and academia that use refrigeration equipment.

Refrigeration controls

Measure ID	Equipment Type	Unit
FE-16	Beverage vending machine controllers	Controller
FE-17	Anti-sweat heater controls (reservation required)	Door
FE-18	Floating head pressure controls	Ton

FE-16 – Beverage vending machine controllers

Rebates are available for retrofitting existing vending machines with beverage vending machine controllers. The controller must include a passive infrared occupancy sensor to turn off fluorescent lights and other vending machine systems when the surrounding area is unoccupied for 15 minutes or longer.

FE-17 – Anti-sweat heater controls (reservation required)

Rebates are available for anti-sweat heater controls. Eligible control devices that sense the relative humidity in the air outside of the display case and reduces or turns off the glass door (if applicable) and frame anti-sweat heaters at low-humidity conditions. Technologies that can turn off anti-sweat heaters based on sensing condensation on the inner glass pane are also eligible.

FE-18 – Floating head pressure controls

Rebates are available for installing automatic controls to lower condensing pressure at lower ambient temperatures in multiplex refrigeration systems. Controls installed must vary head pressure to adjust condensing temperatures in relation to outdoor air temperature. The controls must replace existing constant pressure or manually controlled systems to achieve lowered head pressure in order to maintain a minimum saturated condensing temperature of 70˚F, or a 20˚F variance below design head pressure during mild weather conditions.

Miscellaneous electric specifications

Clothes washers

Measure ID	Equipment Type	Unit
ME-3	ENERGY STAR® High efficiency clothes washer (electric water heat, electric dryer)	Washer
ME-4	ENERGY STAR® High efficiency clothes washer (electric water heat, gas dryer)	Washer

ME-3 & ME-4 – ENERGY STAR certified high efficiency clothes washer (electric water heater)

Rebates are available for high efficiency clothes washers that are connected to an electric water heater.

Miscellaneous electric

Measure ID	Equipment Type	Unit
ME-5	Heat pump storage water heater	Heater
ME-16	HP water heater - residential unit in commercial application	Heater
ME-6	Electric tankless water heater	Heater
ME-7	High efficiency hand dryer	Dryer
ME-8	Automatic high speed doors - between freezer and dock	Square foot
ME-9	Automatic high speed doors - between freezer and cooler	Square foot
ME-10	Automatic high speed doors - between cooler and dock	Square foot

ME-5 – Heat pump storage water heater

Rebates are available for replacing existing electric domestic water heater with air source heat pump (HP) domestic water heater system that is used in commercial applications. The HP water heater must be installed in conditioned space. A tank style domestic hot water heat pump must be ≤55 gallons, have an EF ≥2.0 and it should replace an existing electric domestic water heater.

ME-16 – Heat pump water heater - residential unit in commercial application

Rebates are available for ENERGY STAR certified residential heat pump water heaters.

ME-6 – Electric tankless water heater

Rebates are available for tankless/instantaneous electric water heaters that replace existing electric storage water heaters. Replacement unit must have an energy factor ≥0.95.

ME-7 – High efficiency hand dryer

Rebates are available for high efficiency hand dryers that replace standard efficiency hand dryers. High efficiency hand dryers must have a demand rating ≤ 1,500 Watts and have a drying cycle time ≤ 15 seconds.

ME-8 – Automatic high speed doors – between freezer and dock

Must install high speed doors in place of strip curtains, separating with different cooling set points.

ME-9 – Automatic high speed doors – between freezer and cooler

Must install high speed doors in place of strip curtains, separating with different cooling set points.

ME-10 – Automatic high speed doors – between cooler and dock

Must install high speed doors in place of strip curtains, separating with different cooling set points.

Laminar flow restrictors

Measure ID	Equipment Type		Unit
ME-11	Laminar flow restrictor - public	0.5 gpm	Per restrictor
ME-12	Laminar flow restrictor - private	0.5 gpm	
ME-13		1.0 gpm	
ME-14		1.5 gpm	
ME-15		2.0 gpm	

ME-11 to ME-15 – Laminar flow restrictor

This measure offers rebates for installation of laminar flow restrictors on faucets in public or private lavatories. The laminar flow restrictor must have a flow rate of ≤ 2 gallons per minute (GPM). Existing faucet must not have an aerator but must have higher flow rate than the laminar flow restrictor. Assumes no preheating or heat recovery technologies at the facility.

Transformers

Measure ID	Equipment Type	Unit
ME-23 & ME-27	High efficiency medium voltage dry-type transformers	kVA
ME-21 & ME-22	High efficiency medium voltage dry-type transformers, incremental efficiency gain	kVA per .01% increase in efficiency
ME-24 & ME-26	High efficiency liquid immersed transformers	kVA
ME-19 & ME-20	High efficiency liquid immersed transformers, incremental efficiency gain	kVA per .01% increase in efficiency
ME-25 & ME-28	NEMA premium transformers	kVA
ME-17 & ME-18	NEMA premium transformers, incremental efficiency gain	kVA per .01% increase in efficiency

ME-23 & ME-27 – High efficiency medium voltage dry-type transformers

Rebates are available for the installation of new high-efficiency dry-type transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 5 for qualifying efficiencies. Units that exceed qualifying efficiencies are also eligible to receive a rebate for incremental efficiency gains using measure ME-21 or ME-22.

ME-21 & ME-22 – High efficiency medium voltage dry-type transformers, incremental efficiency gain

Rebates are available for the installation of new high-efficiency dry-type transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 5 for qualifying efficiencies. Rebates will be calculated based on the transformer capacity in kVA per 0.01% increase in efficiency.

Table 5: Qualifying efficiency for high efficiency medium voltage dry-type transformers

Single-Phase				Three-Phase			
kVA	20 - 45 kV Eff.	46 - 95 kV Eff.	≥ 96 kV Eff.	kVA	20 - 45 kV Eff.	46 - 95 kV Eff.	≥ 96 kV Eff.
15	98.14	97.9		15	97.54	97.22	
25	98.37	98.16		30	97.94	97.67	
37.5	98.53	98.34		45	98.14	97.90	
50	98.64	98.46		75	98.37	98.14	
75	98.77	98.61	98.57	112.5	98.54	98.41	
100	98.86	98.71	98.67	150	98.69	98.58	
167	99	98.87	98.84	225	98.89	98.78	98.60
250	99.11	98.99	98.95	300	99.01	98.92	98.74
333	99.18	99.07	99.03	500	99.19	99.11	98.96
500	99.26	99.16	99.13	750	99.32	99.25	99.10
667	99.31	99.22	99.19	1000	99.39	99.33	99.20
833	99.35	99.27	99.24	1500	99.48	99.44	99.30
				2000	99.52	99.46	99.34
				2500	99.59	99.55	99.43

ME-24 & ME-26 – High efficiency liquid immersed transformers

Rebates are available for the installation of new high-efficiency liquid immersed transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 6 for qualifying efficiencies. Units that exceed qualifying efficiencies are also eligible to receive a rebate for incremental efficiency gains using measure ME-19 or ME-20.

ME-19 & ME-20 – High efficiency liquid immersed transformers, incremental efficiency gain

Rebates are available for the installation of new high-efficiency liquid immersed transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 6 for qualifying efficiencies. Rebates will be calculated based on the transformer capacity in kVA per 0.01% increase in efficiency.

Table 6: Qualifying efficiency for high efficiency liquid immersed transformers

Single-Phase		Three-Phase	
kVA	Eff.	kVA	Eff.
10	98.76	15	98.87
15	98.87	30	98.99
25	98.98	45	99.04
38	99.08	75	99.12
50	99.13	113	99.19
75	99.21	150	99.22
100	99.27	225	99.28
167	99.39	300	99.3
250	99.44	500	99.43
333	99.48	750	99.46
500	99.54	1000	99.48
667	99.57	1500	99.53
833	99.6	2000	99.55
		2500	99.56

ME-25 & ME-28 – NEMA Premium Transformers

Rebates are available for the installation of new NEMA Premium transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 7 for qualifying efficiencies. Units that exceed qualifying efficiencies are also eligible to receive a rebate for incremental efficiency gains using measure ME-17 or ME-18.

ME-17 & ME-18 – NEMA Premium Transformers, Incremental Efficiency Gain

Rebates are available for the installation of new NEMA Premium transformers. Measure eligibility will be determined based on single- or three- phase voltage. Refer to table 7 for qualifying efficiencies. Rebates will be calculated based on the transformer capacity in kVA per 0.01% increase in efficiency.

Table 7: Qualifying efficiency for NEMA premium transformers

Single-Phase		Three-Phase	
kVA	Eff.	kVA	Eff.
15	98.39	15	97.90
25	98.6	30	98.25
37.5	98.74	45	98.39
50	98.81	75	98.60
75	98.95	112.5	98.74
100	99.02	150	98.81
167	99.09	225	98.95
250	99.16	300	99.02
333	99.23	500	99.09
		750	99.16
		1000	99.23

Prescriptive gas measures and specifications

HVAC gas specifications

Prescriptive rebates are available only for retrofit or new construction projects using natural gas as the primary fuel source. If a dual-fuel system is used or if natural gas is the back-up or redundant fuel, the custom rebate application must be used.

Boilers and furnaces

Measure ID	Equipment Type			Unit
HG-1	Boiler modulating burner control retrofit			MBH
HG-2	Boiler water reset control retrofit			MBH
HG-3	High efficiency furnace 95% efficient			MBH
HG-4	High efficiency furnace 92% efficient			MBH
HG-5	High efficiency boiler – Space heating	<300 MBH	88% AFUE	MBH
HG-53			90% AFUE	MBH
HG-57		300 – 2,500 MBH	88% *	MBH
HG-58			90% *	MBH
HG-55		2,500 – 10,000 MBH	88% **	MBH
HG-56			90% **	MBH
HG-60		>10,000 MBH	88% **	MBH
HG-61			90% **	MBH
HG-6	Leaking steam trap repair or replacement			Trap
HG-41	Steam trap monitoring system - space heating			Trap
HG-32	O_2 trim controls added to boilers without linkageless controls			MBH
HG-33	Linkageless boiler controls			MBH
HG-34	O_2 trim controls added to boilers with linkageless controls			MBH
HG-38 to HG-40	Boiler stack economizer			MBH
HG-49	HVAC boiler sequencing			kBtu per hr

* Thermal Efficiency ** Combustion Efficiency

HG-1 – Boiler modulating burner control

Rebates are available for retrofitting existing non-modulating boilers with modulating burner controls added to boilers. The control must have a minimum turn-down ratio of 5:1. Boiler must operate a minimum of 4,000 hours per year. Rebate is only available for equipment used in space heating conditions.

HG-2 – Boiler water reset control

Rebates are available for temperature reset controls added to existing boilers operating with a constant supply temperature. A replacement boiler with boiler reset controls is not eligible. For controls on multiple boilers to be eligible, control strategy must stage the lag boiler(s) only after the lead boiler fails to maintain the desired boiler water temperature. Rebate is available only for equipment used in space heating conditions.

HG-3 & HG-4 – High efficiency gas furnace/unit heater

Rebates are available for replacement furnaces and unit heaters that have an AFUE of 92% or greater and have a sealed combustion unit. Air handlers are not eligible. Equipment purchased for backup or redundancy is not eligible. Rebate is only available for equipment used in space heating conditions.

HG-5 & HG-53 – High efficiency space heating boiler

Rebates are available for replacement boilers used for space heating. Boilers purchased for backup or redundancy are not eligible. Boilers must be modulating with a minimum turndown ratio of 5:1 and be of the sealed combustion type. Refer to Boilers and Furnaces Table for qualifying efficiencies.

HG-55 to HG-58, HG-60 & HG-61 – High efficiency boiler

Rebates are available for replacement boilers used for space heating. Boilers purchased for backup or redundancy are not eligible. Boilers must be modulating with a minimum turndown ratio of 5:1 and be of the sealed combustion type.

HG-6 – Steam trap repair/replacement

Rebates are available for the repair or replacement of steam traps that have failed open and that are leaking steam. Rebates are not available for traps that have failed, closed, or that are plugged. Rebates are available once per 24 month period, per trap. Steam trap repair work must be recorded and the service report must be attached to the rebate application. The report must contain:

- Name of survey/repair technician
- Survey/repair date
- System nominal steam pressure
- Annual hours of operation
- Number of steam traps serviced
- Per steam trap:
  - ID tag number, location and type of trap
- If repaired or replaced:
  - Orifice size
  - Pre- and post-conditions (e.g., functioning/not functioning, leaking/not leaking)

HG-41 – Steam trap monitoring system – space heating

Rebates are available for the installation of steam trap monitoring systems. Pre-existing automatic steam trap monitoring systems are not eligible. Supporting documentation must include characteristics for the steam system, including number of steam traps, boiler efficiency, steam trap orifice size(s), and operating pressure. Monitoring systems must provide real time data to identify leaking and failed steam traps.

HG-32 – O_2 trim controls added to boilers without linkageless controls

Rebates are available for adding boiler oxygen trim controls to existing boilers without linkageless boiler controls. Both space heating and process boilers are eligible for this rebate. Redundant and backup boilers do not qualify for this rebate. When combining with linkageless boiler controls, apply for both HG-33 and HG-34.

HG-33 – Linkageless boiler controls

Rebates are available for adding linkageless boiler controls to existing boilers without boiler oxygen trim controls. Both space heating and process boilers are eligible for this rebate. Redundant and backup boilers do not qualify for this rebate. When combining with boiler oxygen trim controls, apply for both HG-33 and HG-34.

HG-34 – O_2 trim controls added to boilers with linkageless controls

Rebates are available for adding boiler oxygen trim controls to existing boilers that have linkageless controls. Both space heating and process boilers are eligible for this rebate. Redundant and backup boilers do not qualify for this rebate. When adding both boiler oxygen trim controls and linkageless controls, please apply for both HG-33 and HG-34.

HG-38 to HG-40 – Boiler stack economizer

Rebates are available for adding stack economizers that recover flue gas waste heat from existing boilers. Boilers must be used for space heating. Economizers must reduce net stack temperature (flue gas exit temperature minus the inlet combustion air temperature) at least 80˚F and must offset a heating load. Both water and steam boilers are eligible. This rebate can be combined with rebates for new boilers. Economizers on redundant or back-up boilers are not eligible.

HVAC gas specifications

HG-49 – HVAC boiler sequencing

Available for installing sequence controls on existing boilers and for new boilers with built-in controls. The customer must provide the nominal unit rating (MBH) for the lead boiler and all additional lag/redundant boilers in the boiler plant. The Boiler Plant Control rebate is available for heating systems with at least two boilers currently isolated from each other independently feeding a common header. All boilers shall be monitored and controlled, at a minimum, as follows: sequenced and staged, both enabled and disabled, in a manner to optimize their operation as recommended by the boiler manufacturer. Within 15 minutes of disabling a boiler, the boiler's flow through that disabled boiler must be stopped, either by automatically disabling the boiler's corresponding circulating pump, or through automatically shutting off an isolation valve when applicable. Hospitals or universities whose boilers operate year round may qualify as a process boiler. Qualifies for new construction and retrofit applications.

Other HVAC

Measure ID	Equipment Type	Unit
HG-7	Infrared heaters	MBH
HG-9	Destratification fans	1,000 sq. ft.
HG-10	Direct fired make-up air units	MBH
HG-11	Outside air ventilation reduction	CFM
HG-35	Sensible energy recovery ventilation	CFM
HG-36	Total energy recovery ventilation	CFM
HG-37	Automatic high speed doors – exterior doors	Square foot
HG-47	DDS/MZS to VAV	1,000 sq. ft.
HG-59	CAV to VAV	1,000 sq. ft.
HG-52	Original double hung windows with low U storm	100 sq. ft.
HG-54	Window reduction	100 sq. ft. glazing

HG-7 – Infrared heaters

Rebates are available for infrared heaters with electronic ignition replacing unit heaters. Low-intensity heaters must use non-conditioned, outside air for combustion. Rebates are available for heaters used for building space heating.

HG-9 – Destratification fans

Rebates are available for adding destratification fans to spaces that are heated and that have a ceiling height ≥15 feet. Floor plan must be submitted verifying square footage.

HG-10 – Direct fired make-up air units

Rebates are available for replacing standard efficiency indirect fired heating units with a direct-fired make-up air unit. This measure can be combined with outside air ventilation reduction (HG-11).

HG-11 – Outside air ventilation reduction (reservation required)

Rebates are available for permanently reducing the outside air ventilation rate to a space with gas heat, during the heating season. Outside air must be mechanically provided to the space. Complete outside airflow rate measurements, in CFM, must be clearly documented and provided for both the existing and reduced ventilation system to verify the CFM reduced. The existing and new outside air volume flow rate should comply with all local and/or state codes.

HG-35 – Sensible energy recovery ventilation

Rebates are available for sensible heat energy recovery ventilators (HRV) (e.g. flat plate heat exchangers). Both whole unit replacements with integrated HRV and retrofits to existing HVAC units are eligible. Sensible heat HRV should have a sensible recovery effectiveness of 55%. The space being served by the HRV must be heated with natural gas. This rebate can be combined with rebates for high efficiency HVAC units when performing a whole unit replacement with qualifying efficiency.

HG-36 – Total energy recovery ventilation

Rebates are available for total heat energy recovery ventilators (ERV) (e.g. enthalpy wheels). Both whole unit replacements with integrated ERV and retrofits to existing HVAC units are eligible. Total heat ERV should have a total recovery effectiveness of 70%. The space being served by the ERV must be heated with natural gas. This rebate can be combined with rebates for high efficiency HVAC units when performing a whole unit replacement with qualifying efficiency. If an ERV does not meet the total recovery effectiveness requirement, but it does meet the sensible recovery effectiveness requirement, then it is eligible for measure HG-35.

HG-37 – Automatic high speed doors – exterior doors

Rebates are available for installing automatic high speed doors that replace standard roll-up doors between a conditioned space and an unconditioned space. Conditioned space must be heated with natural gas. Rebate unit is per sq. ft. of the door.

HG-47 – DDS/MZS to VAV

Must be converting a dual duct system/multi-zone system to a variable air volume (VAV) system. The areas served by the air system must be conditioned spaces (both heated and air conditioned). At a minimum, variable frequency drives (VFDs) must be installed on all fans in the system and VAV boxes and reheat must be added to a minimum of four zones. The rebate cannot be combined with the rebate for VFD/VSD on HVAC Fans or HVAC Pumps. Adding a VFD and controls to a dual duct or multi-zone AHU does not qualify. Existing single zone air handling equipment does not qualify (i.e., classroom unit ventilators or fan coil units). See electric Measure ID (HE-60).

HG-59 – CAV to VAV

Rebates are available for the conversion of a constant air volume (CAV) building HVAC system to a VAV building HVAC system. VAV upgrades should include the installation of an airside economizer, VFD(s) on the supply fan, and VAV reheat boxes at the zone level. Fractional areas will be evaluated to two decimal places.

HG-52 – Original double hung windows with low U storm

Rebates are available for rehabilitating double hung storm windows with low U values. The solar heat gain coefficient (SHGC) value must improve from ≥0.73 to ≤0.27. The U-value must improve from ≥1.27 to ≤0.21. Fractional values are allowed for areas that are not multiples of 100 square feet. Documentation must be submitted verifying square footage.

HG-54 – Window reduction

This measure is for replacing existing window glazing with opaque insulation panels that are ≥ R-11. Provide the following: a scaled plan of the facility's total window area that is being replaced with insulation panels, a window construction detail (sketch) showing a section cut of the existing window with proposed insulation panel, and specifications of the proposed insulation panel. Pre-construction pictures of the condition of the existing windows would also be beneficial.

HVAC gas specifications

HVAC controls

Measure ID	Equipment Type	Unit
HG-15	Demand controlled ventilation CO_2 sensor-based	1,000 sq. ft.
HG-16	HVAC occupancy sensor	1,000 sq. ft.
HG-18	Hotel guestroom energy management control (gas heat)	Room
HG-46	Optimum start	1,000 sq. ft.
HG-48	DCV and HVAC occ sensor	1,000 sq. ft.
HG-51	Enhanced ventilation control	Tons

HG-15 – Demand controlled ventilation CO2 sensor-based

Rebates are available to retrofit existing buildings with ventilation controls that use carbon dioxide levels to measure occupancy and modify the percentage of outside air based on occupancy levels. Only buildings with space heating requirements are eligible. Zone-level and return system CO2 sensors are eligible. Cannot be combined with the HVAC occupancy sensor rebate. Fractional values are allowed for areas that are not multiples of 1,000 square feet. Floor plan must be submitted verifying square footage.

HG-16 – HVAC occupancy sensor

Rebates are available for installing HVAC occupancy sensor controls used to reset space temperatures and reduce ventilation air supplied to individual zones when they are unoccupied. This rebate is not available for spaces controlled by outside air demand control ventilation systems. Fractional values are allowed for areas that are not multiples of 1,000 square feet. Floor plan must be submitted verifying square footage. These measures can be combined with measures for interior lighting occupancy sensors (LO-60 to LO-62 or LO-63 to LO-65) if sensors are controlling both HVAC and lighting.

HG-18 – Hotel guestroom energy management control (gas heat)

Rebates are available for new sensors that control HVAC units for individual hotel rooms. Guest rooms must be controlled by automatic occupancy detectors. Replacement or upgrades of existing occupancy-based controls are not eligible. For multi-room suites, the rebate is available per room controlled when a sensor is installed in each room.

HG-46 – Optimum start

During optimal start morning warm-up, the supply fan shall run continuously and the heating or cooling shall be energized but the OA damper shall remain closed unless in economizer mode. Floor plans showing pertinent areas should be provided along with sequence of operation. Service contracts with an optimal start upgrade are not eligible. System must feature automated setback and/or setup capabilities at least five times weekly.

HG-48 – DCV and HVAC occupancy sensor

This rebate is available for installing both demand control ventilation and occupancy sensors for HVAC. Occupancy sensor controls shall be used to reset space temperatures and reduce ventilation air supplied to individual zones when they are unoccupied. Retrofitting existing buildings with ventilation controls shall use carbon dioxide levels to measure occupancy and modify the percentage of outside air based on occupancy levels. Only buildings with space heating requirements are eligible. Zone-level and return system CO2 sensors are eligible. Fractional values are allowed for areas that are not multiples of 1,000 sq. ft. Floor plan must be submitted verifying square footage. These measures can be combined with (LO-60 to LO-62 or LO-63 to LO-65) if sensors are controlling both HVAC and lighting.

HG-51 – Enhanced ventilation control

This rebate is available for adding enhanced ventilation control (EVC) to single zone packaged heating, ventilation, and air conditioning (HVAC) units or roof-top units (RTU). Available for both new and existing HVAC equipment; however, the existing RTU must be in good working order.

Must include the following:

- An advanced digital economizer control (ADEC) system replaces their existing analog or non-functional economizer control system with an ADEC system.
- The ADEC system must identify and report problems with sensors, dampers, and other components to ensure consistent and reliable economizer mode operation.
- Demand Control Ventilation (DCV) to reduce the amount of ventilation during periods of low occupancy, typically achieved through a carbon dioxide (CO_2) sensor.
- The DCV must be tied into the controller Variable Speed Drives (VSD) to modulate the supply fan (evaporator) motor. The VSD must be automatically controlled by differential pressure, flow, temperature, or other variable signals. The VSD must be tied to the controller.

This measure cannot be combined with the DCV, VFD, or economizer rebate measures. Rebate will be based on the nominal input rating in tons of the HVAC equipment. The existing system cannot have a supply fan VFD or CO_2 sensors installed. Factory provided controls on a new RTU would not qualify.

Hot water and laundry specifications

Hot water

Measure ID	Equipment Type			Unit
WG-1	High efficiency indirect domestic hot water heating system (90% efficient)			MBH
WG-2	Mid efficiency indirect domestic hot water heating system (84% efficient)			MBH
WG-3	Gas tankless water heater			Heater
WG-4	High efficiency pool heater (gas heat)			MBH
WG-5	Low-flow sink aerator			Aerator
WG-6	Low-flow shower head			Shower head
WG-15	Condenser heat recovery DWH	HVAC cooling	Water-cooled	Ton
WG-16			Air-cooled	Ton
WG-17		Process cooling	Water-cooled	Ton
WG-18			Air-cooled	Ton

WG-1 & WG-2 – Domestic hot water system

Rebates are available for domestic hot water systems containing a new boiler and a separate storage tank. The boiler must have a thermal efficiency (AFUE) of 84% or better for a mid-efficiency system and 90% or better for a high-efficiency system. Boiler must be 75 MBH or larger to qualify. Boilers used for space heating do not qualify for this rebate.

WG-3 – Gas tankless water heater

Rebates are available for tankless/instantaneous gas water heaters that replace existing gas storage water heaters. Replacement unit must have a UEF of ≥0.81.

WG-4 – High efficiency pool heater

Rebates are available for replacement indoor pool heaters. Replacement heaters must have a thermal efficiency ≥ 84% and must be rated between 500 MBH and 2,000 MBH. The pool heater may not be used as a back-up for solar water-heating.

WG-5 – Low-flow sink aerator

Rebates are available for low-flow sink aerators which must not exceed a 1.0 gallons per minute (gpm) flow rate and are installed on a system with a gas water heater.

WG-6 – Low-flow shower head

Rebates are available for low-flow shower heads that must not exceed a 2 gpm flow rate and are installed on a system with a gas water heater.

WG-15 to WG-18 – Condenser heat recovery

Rebates are available for the installation of heat recovery technology on air-cooled or water-cooled condensers on process or HVAC equipment that supplement heat for domestic hot water. New construction applications with chiller plants that operate under 400 tons qualify. This rebate may be combined with high efficient air conditioning measures.

Gas storage water heater

Measure ID	Equipment Type	Unit
WG-8	≤ 75,000 Btu/hr, high-efficiency (>0.81 UEF)	Heater
WG-10	> 75,000 Btu/hr, high-efficiency (≥0.94 thermal efficiency)	Heater

WG-8 – Gas storage water heater (≤ 55 gallons)

Rebates are available for natural gas high-efficiency storage tank water heaters that replace existing natural gas storage water heaters. Water heaters must be less than or equal to 55 gallons in size and less than or equal to 75,000 Btu/hr in capacity. Heaters must have a UEF >0.81.

WG-10 – Gas storage water heater (> 55 gallons)

Rebates are available for natural gas high-efficiency storage water heaters that replace existing natural gas storage water heaters. Water heaters must be greater than 55 gallons in size and >75,000 Btu/hr, in capacity. Heaters must have a thermal efficiency ≥0.94.

Laundry

Measure ID	Equipment Type	Unit
WG-11	ENERGY STAR® High efficiency clothes washer (gas water heat, electric dryer)	Washer
WG-12	ENERGY STAR® High efficiency clothes washer (gas water heat, gas dryer)	Washer
WG-13	Ozone laundry	lb. wash capacity

WG-11 & WG-12 – ENERGY STAR certified clothes washer (gas water heater)

Rebates are available for ENERGY STAR® clothes washers connected to a gas water heater with electric or gas dryers.

WG-13 – Ozone laundry system

Rebates are available for ozone injection systems added to existing or new commercial washers using hot water from a natural gas boiler or water heater. System must be installed on-site. This rebate is available only to fitness and recreational sports centers and to hotels or motels with fewer than 250 guest rooms or similar building types. Not available for commercial laundry.

Laminar flow restrictors

Measure ID	Equipment Type		Unit
WG-19	Laminar flow restrictor - public	0.5 gpm	Per restrictor
WG-20	Laminar flow restrictor - private	0.5 gpm	
WG-21		1.0 gpm	
WG-22		1.5 gpm	
WG-23		2.0 gpm	

WG-19 to WG-23 – Laminar flow restrictor

This measure offers rebates on private lavatories a laminar flow restrictor with a flow rate of less than or equal to 2 gallons per minute. On public lavatories a laminar flow restrictor that is equal to 0.5 gallons per minute, where the flow rate of the faucet aerator being replaced is 1.67 gpm or greater. Existing faucet must not have an aerator but must have higher GPM than the laminar flow restrictor. Assumes no preheating or heat recovery technologies at the facility.

Insulation specifications

Insulation

Measure ID	Equipment Type	Unit
IG-1	Pipe wrap – steam boiler	Linear foot
IG-2	Pipe wrap – steam boiler condensate return	Linear foot
IG-3	Pipe wrap – hot water boiler	Linear foot
IG-4	Domestic hot water pipe wrap	Linear foot
IG-7 & IG-8	Truck loading dock seals	Door
IG-9	Truck loading dock leveler seals	Ramp
IG-10	Flat roof insulation	1,000 sq. ft.
IG-11	Attic roof insulation	1,000 sq. ft.
IG-12	Wall insulation (reservation required)	1,000 sq. ft.
IG-13	Pool covers	Sq. ft.

IG-1 – Pipe wrap – steam boiler

Rebates are available for insulation applied to existing bare steam boiler piping used for space heating. Insulation must have an applied thickness of at least 1 inch and a minimum thermal resistance of R-4. A minimum of 10 linear feet of pipe must be insulated or a sufficient number of fittings that equal 10 linear feet. The outer diameter of the bare pipe size must be ½ inch or larger.

IG-2 – Pipe wrap - steam boiler condensate return

Rebates are available for adding insulation to existing steam heating piping systems that are not insulated. Only condensate return piping used as heating piping qualifies; condensate piping extending to a drain does not qualify. A minimum of R-4 (approximately 1 inch thickness) of pre-formed pipe insulation must be added. New or recently repaired piping does not qualify for this rebate. The outer diameter of the bare pipe size must be ½ inch or larger. A minimum of 10 linear feet of pipe must be insulated or a sufficient number of fittings that equal 10 linear feet. Documentation must include the manufacturer's name, insulation material type and the material K-value or R-value rating.

IG-3 – Pipe wrap – hot water boiler

Rebates are available for insulation applied to existing bare hot water boiler piping used for space heating. Insulation must have an applied thickness of at least 1 inch and a minimum thermal resistance of R-4. A minimum of 10 linear feet of pipe must be insulated or a sufficient number of fittings that equal 10 linear feet. The outer diameter of the bare pipe size must be ½ inch or larger.

IG-4 – Pipe wrap – domestic hot water

Rebates are available for insulation applied to existing bare pipe for domestic hot water systems. Insulation must have an applied thickness of at least 1 inch for a minimum thermal resistance of R-4. Pipe must be between ½ inch and 2½ inches nominal diameter. Piping associated with new boiler systems is not eligible. Repair or replacement of existing insulation does not qualify.

IG-7 & IG-8 – Truck loading dock seals

Rebates are available for seals (shelters) added to loading dock doors without seals or with existing degraded seals. Seals must effectively close all gaps between the building and semi-trailer. Dock door seals must cover the "hinge gap" that occurs with outwardly swinging trailer doors. Building interior space must be heated with natural gas.

IG-9 – Truck loading dock leveler seals

Rebates are available for leveler ramp air pit seals added to existing loading dock systems without seals. Seals may be attached to either the building or the ramp. Ramp seals must maintain an effective seal both when ramp is in use or out of use. Brush or whisker-type seals not used in conjunction with air seals do not qualify for rebates. Installation of seals where there is an existing brush barrier does not qualify for this rebate.

IG-10 & IG-11 – Roof insulation (flat roofs and attic roofs)

Rebates are available for adding insulation to existing buildings heated with natural gas. Insulation must be installed between conditioned and unconditioned spaces. Insulation installed above dropped commercial ceilings is not eligible. Pre-retrofit insulation levels must be less than R-11 for all eligible roofs. Final assembly insulation levels on flat roofs must exceed R-24. Final assembly insulation levels on attic roofs must exceed R-42. Application will require a scaled plan of the total roof area being insulated, a roof construction statement with R-value of the pre-retrofit roof and specifications of the proposed roof insulation.

IG-12 – Wall insulation (reservation required)

Rebates are available for adding insulation to existing walls in a space that is heated with natural gas. The pre-retrofit walls must not be insulated. The final insulation levels should exceed R-13.

IG-13 – Pool covers

Rebates are available for interior or exterior pool covers between 400 and 4,000 square feet in size.

Process gas specifications

Process gas

Measure ID	Equipment Type		Unit
PG-14	Furnace tube inserts		Insert
PG-15	High efficiency process boiler (water)		MBH
PG-16	High efficiency process boiler (steam)		MBH
PG-17	Tank insulation 1"	Low temp (120˚F - 170˚F)	Square foot
PG-18		High temp (>170˚F)	Square foot
PG-19	Tank insulation 2"	Low temp (120˚F - 170˚F)	Square foot
PG-20		High temp (>170˚F)	Square foot
PG-21	Air compressor exhaust heat recovery		HP
PG-22 to PG-24	Process boiler stack economizer		MBH
PG-25	Modulated boiler control for process		MBH
PG-26 to PG-27	Regenerative/recuperative thermal oxidizer retrofit		CFM
PG-28 & PG-29	Regenerative/recuperative thermal oxidizer replacement		CFM
PG-30 & PG-39	Optimized snow and ice melt controls - with idle mode		Square feet
PG-31 to PG-37	Steam trap monitoring system industrial pressure		Trap
PG-38	Process boiler sequencing		MBH

PG-14 – Furnace tube inserts

Rebates are available for spiral ceramic inserts installed in the exhaust leg of heat treating furnace burner tubes. The inserts must be new and replace existing burner tubes.

PG-15 & PG-16 – High efficiency process boiler (water or steam)

Rebates are available for new or replacement boilers used in manufacturing processes. Boiler must have a thermal efficiency of at least 82%.

PG-17 to PG-20 – Tank insulation

Rebates are available for adding insulation to existing hot-fluid storage or process tanks that are not insulated. Replacement insulation is not eligible. Tank must be uninsulated, bare or painted steel, and in use 8,760 hours/year. Insulation must have a thermal resistance of at least R-3.2 per inch.

PG-21 – Air compressor exhaust heat recovery

Rebates are available for the recovery of waste heat generated by an air compressor system. Waste heat can be utilized for space heating, domestic water heating or other process heating. The horsepower of back-up or redundant equipment cannot be included in this measure. The waste heat recovery system must be controlled by a thermostat, building energy management system or a manual damper to duct the waste heat into a conditioned space (or process) when required.

PG-22 to PG-24 – Process boiler stack economizer

Rebates are available for adding stack economizers that recover flue gas waste heat from existing boilers. Boilers must be used for industrial, manufacturing, agricultural, university or hospital purposes. Economizer must reduce net stack temperature (flue gas exit temperature minus the inlet combustion air temperature) at least 80˚F and must use the recovered heat to preheat either combustion air or boiler feed water. Both water and steam boilers are eligible. This rebate can be combined with rebates for new process boilers. Economizers on redundant or back-up boilers are not eligible.

PG-25 – Modulated boiler control for process

Rebates are available for retrofitting existing non-modulating boilers with modulating burner controls. The control must have a minimum turn-down ratio of 5:1. University and hospital boilers that operate year-round also qualify. The manufacturer name and equipment model number of the boiler must be provided.

PG-26 & PG-27 – Regenerative/recuperative thermal oxidizer retrofit

Rebates are available for upgrading existing thermal oxidizers/ incinerators to include recuperative or regenerative heat recovery. Exhaust gas outlet temperature with heat recovery (post-upgrade) must be at least 1,200˚F lower than exhaust outlet temperature without heat recovery (pre-upgrade).

PG-28 & PG-29 – Regenerative/recuperative thermal oxidizer replacement

Rebates are available for replacing existing or installing new thermal oxidizers/incinerators with equipment that includes recuperative or regenerative heat recovery. Exhaust gas outlet temperature with heat recovery (post-upgrade) must be at least 1,200˚F lower than exhaust outlet temperature without heat recovery (pre-upgrade).

PG-30 & PG-39 – Optimized snow and ice melt controls

Rebates are available for installing optimized snow/ice melt controls on existing or new boiler systems used for melting snow. The new controls must be programmed to setback the slab temperature to at most 35˚F during idle time and allow the slab temperature to reset to at least 40ºF once moisture sensors in the slab sense precipitation.

PG-31 to PG-37 – Steam trap monitoring system – process heat

Rebates are available for the installation of steam trap monitoring systems. Pre-existing automatic steam trap monitoring systems are not eligible. Supporting documentation must provide characteristics for the steam system, including number of steam traps, boiler efficiency, steam trap orifice size(s), operating pressure. Monitoring systems must provide real time data to identify leaking and failed steam traps.

PG-38 – Process boiler sequencing

Available for process boilers only. Applicable primarily for the industrial sector, agricultural and misc. process uses. Manufacturer name and equipment model number must be provided. Rebate available once per boiler installation. Direct contact water heaters, boilers primarily used for domestic hot water, space conditioning, pool or spa use do not qualify.

Miscellaneous gas specifications

Miscellaneous - gas

Measure ID	Equipment Type		Unit
FG-11	Vertical night covers		Linear ft. x hrs/day
FG-12	Refrigeration condenser waste heat recovery	Domestic water heater	Nominal cooling ton
FG-13		Space heating	Nominal cooling ton
FG-14	Reach-in refrigerated display case door retrofit	33˚ - 50˚F (medium temp.)	Linear foot
FG-15		0˚ - 32˚F (low temp.)	Linear foot

FG-11 – Vertical night covers

Rebates are available for night covers installed on open refrigerated display cases. Rebate does not include horizontal covers.

FG-12 – Refrigeration condenser waste heat recovery (domestic water heater)

Rebates are available for installing new heat recovery equipment to harvest heat from the refrigeration system. At least 30% of the refrigeration system waste heat must be utilized for domestic water heating.

FG-13 – Refrigeration condenser waste heat recovery (space heating)

Rebates are available for installing new heat recovery equipment to harvest heat from the refrigeration system. Heat that is rejected by condenser is reclaimed by ducting into the HVAC system. The condenser used to reject refrigeration system heat must be located where the heat rejected is not used for building heat or other purposes (>95% wasted). At least 30% of the refrigeration system waste heat must be utilized for space heating.

FG-14 & FG-15 – Reach-in refrigerated display case door retrofit

Rebates are available for installing new vertical glass doors on existing open, vertical (or multi-deck), low temperature (LT) or medium temperature (MT) display cases, or for replacing existing, open, vertical (or multi-deck) display cases with new reach-in glass door display cases. The air temperature inside the cases must range from 0˚-32˚F (LT), or 33˚- 50˚F (MT). The case length must be equal to, or shorter than, the original case. Cases must be in a space heated by natural gas.

Boiler/furnace tune-up specifications

Boiler tune-up

To apply for Boiler Tune-ups, click this link: Boiler Tune-Up Checklist, download and complete.

Measure ID	Equipment Service	Size	Unit
HG-21	Space heating boiler tune-up	110 – 500 MBH	Boiler
HG-22		501 – 1,200 MBH	Boiler
HG-23		> 1,200 MBH	Boiler
HG-24	Process boiler tune-up		MBH
HG-28	Domestic hot water boiler tune-up	≥ 199 MBH	Boiler
HG-50	Process boiler tune-up (pool/spa)		MBH

HG-21 to HG-23 – Boiler tune-up (space heating boilers only)

Rebates are available for tune-ups to natural gas-fired, space heating boilers. The rebate is available once every two program years. Boiler size must be 110 MBH or greater input. The service provider must perform a combustion analysis both before and after the tune-up and attach the printout to the final application. The tune-up checklist must be filled out per boiler. Other forms that include all the required information are acceptable.

HG-24 – Boiler tune-up (process boilers only)

Rebates are available for tune-ups to natural gas-fired, process boilers. Boilers used primarily for domestic hot water, space heating or pool/spa use are not eligible. The rebate is available once every two program years. The service provider must perform a combustion analysis before and after the tune-up and attach the printout to the final application. The tune-up checklist must be filled out per boiler. Other forms that include all the required information are acceptable.

HG-28 – Domestic hot water boiler tune-up

Rebates are available for tune-ups to natural gas-fired boilers for domestic hot water. Boilers used primarily for pool/spa use, space heating or process load are not eligible. Burners must be adjusted to improve combustion efficiency as needed. The rebate is available once every two program years. Boiler size must be 199 MBH or greater input. The service provider must perform a combustion analysis before and after the tune-up and attach the printout to the final application. The tune-up checklist must be filled out per boiler. Other forms that include all the required information are acceptable.

HG-50 – Process boiler tune-up (pool/spa)

Rebates are available for tune-ups to natural gas-fired, process boilers. Boilers must be used only for pool/spa heating. The rebate is available once every two program years. The service provider must perform a combustion analysis before after the tune-up and attach the printout to the final application. The tune-up checklist must be filled out per boiler. Other forms that include all the required information are acceptable.

Furnace/RTU tune-up

Measure ID	Equipment Service	Size	Unit
HG-29	Furnace/RTU tune-up	40 – 300 MBH	Furnace/RTU
HG-30		301 – 500 MBH	Furnace/RTU
HG-31		> 500 MBH	Furnace/RTU

HG-29 to HG-31 – Forced air gas furnace or rooftop unit (RTU) tune-up (space heating units only)

Rebates are available for a combustion burner tune-up for indirect fired units with an input of 40 MBH or greater. This includes furnaces, rooftop units, unit heaters and air handling units that are indirect fired. Contractor must complete a tune-up checklist for each unit serviced. A single unit with multiple burners or modules is considered one unit. A rooftop unit is considered one unit. The rebate is available once every two program years. Other forms that include all the required information are acceptable.

Process furnace/burner tune-up

Measure ID	Equipment Service	Size	Unit
HG-42	Process furnace/oven tune-ups	≥ 500 MBH	MBH

HG-42 – Process furnace/oven tune-ups

Rebates are available for tune-ups to natural gas burners for process furnaces and ovens. A burner tune-up includes reducing excess air and stack temperature, cleaning burners, burner nozzles, combustion chamber and sealing the combustion chamber. Manufacturer name and equipment model number must be provided. The rebate is available once every two years. The service provider must perform a post combustion analysis and record the results on the boiler tune-up rebate application checklist.

Agriculture specifications

Agricultural specifications: residential rate customers only

Process electric - irrigation equipment

Measure ID	Description	Unit
AG-1	VFD on irrigation systems operating ≥ 500 hrs/year (reservation required)	HP
AG-2	Sprinkler to drip irrigation (reservation required)	Acre
AG-3	Low-pressure sprinkler nozzle (reservation required)	Nozzle

AG-1 – Variable frequency drives on irrigation systems (reservation required)

Rebates are available for the installation of variable frequency drives on existing agricultural irrigation systems. Redundant or back-up pumps do not qualify. The new pumps must operate a minimum of 500 hours per year to qualify.

Qualifying existing irrigations systems must either include:

a) several center pivots served by one well, or

b) have a corner arm center pivot where the water flow rate increases when the corner arms swing out towards the corners of the fields.

Other proposed VFD irrigation systems applications will be reviewed on a case-by-case basis. This rebate cannot be combined with the sprinkler drip irrigation rebate or low pressure sprinkler nozzles rebate.

AG-2 – Sprinkler to drip irrigation systems (reservation required)

Rebates are available for the conversion of an existing high-pressure, impact-type sprinkler irrigation system (50-psi or greater at the sprinkler head) to a low-pressure sprinkler micro-system (35-psi or less at the sprinkler head). The existing sprinklers must be removed. Drip tape systems are not applicable. The rebate application must include an assessor's parcel map or other documentation to verify acreage.

AG-3 – Low pressure sprinkler nozzles (reservation required)

Rebates are available for the conversion of an existing one-to-one high-pressure (50 psi or greater at the sprinkler head) sprinkler system nozzle to a low-pressure sprinkler nozzle (35-psi or less at the sprinkler head). Both permanent (solid set) and portable (hand-move) sprinkler system nozzles are eligible for rebates.

Dairy equipment

Measure ID	Description		Unit
AG-4	Scroll compressor for dairy refrigeration, ≥10.5 EER		lb. milk/day
AG-5	Variable frequency controller for vacuum pump (reservation required)		HP
AG-6	Variable frequency drive on milk pump (reservation required)	w/existing pre-cooler	lb. milk/day
AG-7		w/new pre-cooler	lb. milk/day
AG-8	Milk pre-cooler (heat exchanger chiller savings)		lb. milk/day

AG-4 – Scroll compressor for dairy refrigeration

Rebates are available for the replacement of reciprocating compressors only with scroll compressors. The offer is based on one milk pump system per farm; if multiple milk systems exist, the rebate will be based on a ratio of milk processed through each system. Redundant compressor systems do not qualify. Must be ≥ 10.5 EER.

AG-5 – Variable frequency drive for vacuum pump (reservation required)

Rebates are available for the installation of variable frequency drive for vacuum pumps that result in a reduction in horsepower. Existing pump must be blower-type pump.

AG-6 & AG-7 – VFD on milk pump w/new or existing pre-cooler (reservation required)

Rebates are available for the installation of variable frequency drives on milk pumps either with a new or existing pre-cooler. The installation of a VFD must accompany a plate-type pre-cooler; the pre-cooler may be installed at the same time as the VFD milk pump. To qualify, the minimum daily milk production must be ≥5,000 lbs/day. The rebate cannot be combined with any other VFD rebate. The offer is based on one milk pump system per farm; if multiple milk systems exist, the rebate will be based on a ratio of milk processed through each system. Redundant pumps or systems do not qualify.

AG-8 – Milk pre-cooler

Rebates are available for pre-cooler heat exhanger ahead of the milk storage tank. This measure applies only to new heat exchangers. Replacement of existing heat exchangers does not qualify. This rebate can be combined with rebates for VFD on milk pump with new pre-cooler.

Grain dryers

Measure ID	Description	Unit
AG-9	Grain storage temp/moisture management controller	HP

AG-9 – Grain storage temperature/moisture controller

Installation of grain storage temperature/moisture management controller is eligible for this rebate. The existing non-controlled fan aeration system must operate a minimum of 1,000 hours per year. The proposed system must consist of hanging multiple temperature and/or moisture sensors within the grain storage bin. Outdoor air temperature and relative humidity must also be monitored. Data sensors must be digital; analog sensors do not qualify. The grain data must be sent to a controller to evaluate the internal bin conditions, as well as, outside air temperature and outside air relative humidity, to control the aeration fans. Replacement of existing grain storage management controllers do not qualify. Bi-weekly bin inspection is still recommended. Aeration fan equipped with VFD's do not qualify for this rebate.

Dairy refrigeration tune-up

Measure ID	Description	Unit
AG-10	Dairy refrigeration tune-up	lb. milk/day

AG-10 – Dairy refrigeration tune-up

Rebates are available for the tune-up of existing commercial grade, on-farm dairy refrigeration equipment. A dairy refrigeration tune-up checklist/worksheet must be completed by the service provider for each unit. The rebate is available once every two program years.

Agricultural specifications: residential rate customers only

Miscellaneous electric

Measure ID	Description	Unit
AG-11	Low-energy livestock waterer	Waterer
AG-44 & AG-45	Heating mats for hog farms	Mat

AG-11 – Low energy livestock waterer

Rebates are available for the replacement of an existing open waterer with sinking or floating water heater with new low-energy equipment. The new waterer must have a minimum of 2-inches of insulation and must be electrically heated and thermally insulated. The new waterer must serve same herd size as waterer being replaced. A thermostat is required on units with heating elements that are >250 watts.

AG-44 & AG-45 – Heating mats for hog farms

Rebates are available for replacing heat lamps with heating mats in swine farrowing crates. Single or double mats are eligible. New mats must be ≤100W for single mats and ≤200W for double mats. Replacement of existing mats are not eligible.

HVAC electric

Measure ID	Description	Diameter	Minimum Efficiency: Exhaust & Ventilation Fans	Minimum Efficiency: Circulation Fans	Unit
AG-13	Circulation, exhaust & ventilation fans	24" - 35"	14.0 CFM @ 0.10" WG SP	12.5 lb/kW	Fan
AG-14		36" - 47"	17.1 CFM @ 0.10" WG SP	18.25 lb/kW	
AG-15		48" - 71"	20.3 CFM @ 0.10" WG SP	23 lb/kW	
AG-16 to AG-20	High-volume, low-speed fans				Fan
AG-21	Fan thermostat control (reservation required)				HP

AG-13 to AG-15 – Circulation, exhaust or ventilation fans

Rebates are available for the replacement of existing circulation, exhaust and/or ventilation fans. The replacement fans must be new and must meet the specifications listed in the table above.

AG-16 to AG-20 – High-volume low-speed fans

Rebates are available for the installation of high-volume low-speed fans that replace high-speed box fans that traditionally are used in the ventilation of livestock facilities. To qualify, the minimum fan diameter must be at least 16 feet.

AG-21 – Fan thermostat controller (reservation required)

Rebates are available for the installation of a new fan thermostat controller for existing circulation, ventilation or exhaust fans that operate continuously from May through October. The replacement of existing thermostat fan controller does not qualify. The new controller must have thermostat functions that disable the fans when the outside air temperature drops below a predetermined set-point temperature, typically 70˚F.

VFDs for fans and pumps

Measure ID	Description		Unit
AG-22	VFD on fans ≤ 50 HP	operating 750-2,000 hours/year	HP
AG-23		operating more than 2,000 hours/year	HP
AG-24	VFD on pumps ≤ 50 HP	operating 750-2,000 hours/year	HP
AG-25		operating more than 2,000 hours/year	HP

AG-22 to AG-25 – VFDs for fans and pumps ≤ 50 HP

Variable frequency drives (VFD's) installed on existing or new applications of agricultural fans and pumps are eligible for this rebate. Applicant is to provide a summary statement explaining:

a) what the motor is used for;

b) motor's annual run time;

c) how the motor is currently controlled; and

d) proposed motor VFD control method.

The installation of a VFD must accompany the permanent removal or disabling of any throttling devices such as inlet vanes, bypass dampers, bypass valves, or throttling valves. The VFD speed must be automatically controlled by humidity, temperature, differential pressure, flow, or other variable signal. VFD's installed on irrigations or HVAC systems do not qualify for this rebate, but may qualify elsewhere. Motors greater than 50 HP do not qualify for this rebate, but may qualify for a custom measure. Redundant or back up units do not qualify. The replacement of existing VFD's does not qualify for this rebate. The motor must operate more than 750 hours/year.

HVAC gas - grain dryers

Measure ID	Description	Unit
AG-26	Grain dryers	Bushel per year

AG-26 – High efficiency grain dryers (reservation required)

Existing grain dryer must be at least 10 years old and not utilize heat recovery. New dryer must be natural gas heated, permanently installed, and have a minimum grain dryer efficiency of 1,590 Btu/lb-water. Applications must include the manufacturer's name, model number, and a specification sheet for the proposed grain dryer's operating efficiency. Applications must include documentation identifying the proposed annual volume (bushels/year) of grain to be processed.

Insulation

Measure ID	Description	Unit
IG-5	Greenhouse heat curtains	Square foot
IG-6	Greenhouse infrared film	Square foot

IG-5 – Greenhouse heat curtains

Rebates are available for heat curtains that are required to be installed for heat retention in an existing gas-heated commercial growing greenhouse for agricultural use. Must be designed for and installed as a heat curtain. Curtain should meet or exceed an energy savings rating of 40% or better (U-value=0.6). The rebate applies to either a new curtain where a curtain was not previously in place or to replace an existing curtain that is no longer functional and is at least 5 years old. Floor plan must be submitted verifying square footage.

IG-6 – Greenhouse infrared film – new or replacement

Rebates are available for greenhouse film which must be infrared, anti-condensate, polyethylene plastic with a minimum thickness of 6 mils. Measure is for use in an existing gas heated greenhouse. The IR poly must be put in place of regular poly or as a replacement for IR poly that has been in place at least 5 years. Coating applied onsite to existing film does not qualify. Floor plan must be submitted verifying square footage.

Agricultural specifications: residential rate customers only

Greenhouses

Measure ID	Description		Unit
AG-27	Greenhouse environmental controls		Square foot
AG-28	Greenhouse Under-Floor/ Under-Bench Hydronic Heating	without Thermal Curtain	Square foot
AG-29		with Thermal Curtain	Square foot
AG-42	Total ERV indoor ag	HID base	Ton
AG-43		LED base	Ton

AG-27 – Greenhouse environmental controls

Rebates are available for the installation of automated environmental controls system to an existing greenhouse space which does not have any automatic, scheduled temperature setback controls. The environmental control system must, at the very least, control greenhouse space temperature set points with an hourly control configuration. This measure does not apply to greenhouses that are manually set back. A minimum setback space temperature of at least 5 °F is required. A floor plan must be submitted verifying square footage.

AG-28 & AG-29 – Greenhouse under-floor/under-bench hydronic heating

Rebates are available for installing under-floor (within concrete or direct contact) or under-bench hydronic heating loop for agricultural greenhouse applications. If the plant's root temperature is maintained at 67°F, the air temperature surrounding the plant may be allowed to decrease 10°F to 12°F down to approximately 55°F. The existing heating system must be a forced air heating system (i.e., unit heaters). The forced air heating system may be retained for secondary, supplemental heating or for backup; however, it may not be utilized as the primary heating means. Proposed boiler system must be high efficient with a minimum efficiency of 90%. The temperature sensor(s) serving the underfloor or under bench hydronic heating system must be located within the growing media. The rebate is based on the area served by the underfloor hydronic heating system. The under-bench's rebate is based on the area of the benches served by the hydronic heating system.

AG-42 & AG-43 – Total ERV indoor ag, LED or HID base

Rebates are available for total heat energy recovery ventilators (ERV) (e.g. enthalpy wheels) with an LED or HID base. Both whole unit replacements with integrated ERV and retrofits to existing HVAC units are eligible. Total heat ERV should have a total recovery effectiveness of 70%. The space being served by the ERV must be heated with natural gas. This rebate can be combined with rebates for high efficiency HVAC units when performing a whole unit replacement with qualifying efficiency.

Farm energy audit

Measure ID	Description	Unit
AG-12	Farm energy audit	Farm

AG-12 – Farm energy audit

Rebates are available for an audit of a facility that operates primarily as an agricultural business. Audit must be a tier II energy audit as defined by the US Department of Agriculture.

Indoor agricultural specifications

Agricultural lighting

Measure ID	Description	Unit
AG-30 & AG-31	LED grow lights	kWh
AG-40 & AG-41	LED grow lights (new construction)	kWh
AG-35	HVAC reduction in interior horticultural grow rooms	Watts reduced

AG-30 & AG-31 – LED grow lights

Existing high-pressure sodium, metal halide, incandescent, or fluorescent fixture must be replaced by a completely new LED fixture. Lamps must be reduced in wattage, UL Listed, have a power factor (PF) ≥0.90, a minimum rated lifetime of 50,000 hours, and a minimum warranty of 5 years. Tier 1 lights must operate >4,000 to ≤ 6,000 hours/year and Tier 2 lights must operate >6,000 hours/year.

AG-40 & AG-41 – LED grow lights (new construction)

New LED grow fixtures must be third party tested, reduced in wattage, UL Listed, have a power factor (PF) ≥0.90, a minimum rated lifetime of 50,000 hours, and a minimum warranty of 5 years. New construction LED lamps shall have a PPE of ≥1.90 µmol × J-1. Tier 1 lights must operate >4,000 to ≤ 6,000 hours/year and Tier 2 lights must operate >6,000 hours/year.

AG-35 – HVAC reduction due to LED lighting in horticultural grow rooms

Grow rooms for indoor cannabis grow facilities must operate year-round. Grow lights must operate at least 4,380 hours a year. Existing high-pressure sodium, metal halide, incandescent, or fluorescent fixture must be replaced by a completely new LED fixture. Lamps must be reduced in wattage, third party tested, UL or ETL listed, have a power factor of (PF) ≥0.90, have a minimum rated lifetime of 50,000 hours and a minimum warranty of 5 years. Must utilize an LED grow light measure (AG-30, AG-31, AG-40, or AG-41). Must use AC year-round. Spaces with free cooling are not eligible for this measure but may be submitted as a custom measure.

Dehumidification - electric

Measure ID	Description	Unit
AG-39	Dehumidification units for indoor horticultural > 155 pints/day	≥ 478ppd

AG-39 – Dehumidification units for indoor horticultural facilities > 155 pint/day capacity

This measure is for new portable or standalone dehumidifiers. Units must be greater than 155 pints/day or less than 478 pints/day and have an energy factor of 2.80 L/kWh (5.92 pints/kWh) or higher. Units greater than or equal to 478 pints/day may be eligible under custom. Dehumidifiers must be installed in an indoor horticultural facility that operates year-round. Green house installations do not qualify. If replacing an existing unit, the proposed unit must be the same size.

Custom electric and gas specifications

Custom specifications

Reservation applications must be submitted for all custom projects while the existing equipment is still in operation so that existing conditions (baseline) can be verified.

Custom projects must involve a facility improvement that results in a permanent reduction in electrical (kWh) and/or natural gas (Mcf) energy usage due to an increase in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a custom rebate.

Service	Unit
Electric	kWh
Natural gas	Mcf

Custom and prescriptive measures may be included on one application. Mixed measures, those with both prescriptive and custom aspects, must be separated into prescriptive and custom measures. Prescriptive measures, or portions thereof, are only eligible for prescriptive rebates. Custom measures, or portions thereof, are only eligible for custom rebates. For custom measures or portions thereof, rebates are limited to 50% of the sum of all custom measure costs (MC). The MC is the cost of implementing a measure less any costs incurred to achieve non-energy related project benefits. Only costs associated with the 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:

1. 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.
2. 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.

For example, when replacing an existing injection molding machine that is at the end of its useful life with a new, high-efficiency model, the price differential between the high-efficiency model and a standard-efficiency model is the MC. However, when adding a variable frequency drive to an existing boiler pump or when changing high intensity discharge (HID) light fixtures to DLC LED fixtures, the MC is the purchase price of the VFD or light fixtures including any external contracted labor for the installation.

All final applications must include manufacturers' equipment specification sheets.

All custom projects must have a simple payback period equal to or greater than one (1) year to be eligible for an rebate. Project payback is equal to the ratio of the project MC divided by the annual energy savings.

Projects that are not eligible for an energy efficiency rebate include, but are not limited to, the following:

- Fuel switching (e.g. electric to gas or gas to electric)
- Changes in operational and/or maintenance practices or simple control modifications not involving capital costs
- On-site electricity generation
- Projects that involve load-shifting/demand-limiting (and not kWh savings)
- Renewables
- Power quality improvements

Requirements for custom project electricity and/or natural gas savings calculation:

With the exception of lighting and compressed air projects, each custom project must have a custom rebate calculation plan (CICP) that is agreed to by DTE Energy, the customer and, if applicable, the customer's contractor or other representative.

The annual electricity and/or gas savings for custom projects must be calculated using industry accepted engineering algorithms or simulation models. Acceptable methods of determining custom project energy savings include detailed calculations, equipment or subsystem metering and/or calibrated building energy modeling. The applicant must detail all assumptions used in the calculations and justify or cite a precedent for the assumptions. The applicant must estimate the annual electricity and/or gas usage of both the existing (baseline) and proposed equipment. If the existing equipment is at the end of its useful life, the applicant must substitute the baseline with new equipment that would meet all applicable federal and local energy codes when calculating the annual energy savings.

DTE Energy will review the application and is solely responsible for the final determination of the annual energy savings methodology to be used in calculating the rebate amount. DTE Energy may need to conduct inspections both before and after the retrofit project to verify equipment and operating conditions. DTE Energy also reserves the right to require specific measurement and verification activities, including monitoring, both before and after the retrofit, and to base the rebate payment on the results of these activities.

LEED and design review assistance

LEED and design review

LEED (Leadership in Energy and Environmental Design) Design Review Assistance

To encourage LEED design/certification for new energy-efficient buildings, a $1,500 rebate for LEED design review assistance is available for electric, gas, or a combination. This rebate is to be paid to the firm or organization upon design modeling completion. Construction does not need to be completed in order to apply for this rebate. This design review assistance corresponds directly to the LEED rating systems.

The whole building energy simulation is tied directly to the energy and atmosphere prerequisite 2 – minimum energy performance prerequisite (Option 1).

The DTE Energy Efficiency Program for Business strongly recommends sharing the progress of your LEED online project in order to keep the entire program team updated. Please contact our outreach team for project assistance at saveenergy@dte.com.

LEED whole building approach

The intent of this approach is to validate the savings associated with LEED certified buildings. Rebates are available for new construction projects that receive LEED certification. Rebates will be paid upon receiving LEED certification at the saving values validated by LEED. The LEED whole building approach rebates directly correspond to the LEED NC v2009 and LEED BD+C v4 ratings systems.

The following rebates are paid to DTE Energy customers based on the energy savings reported in the energy model and verified by the Green Building Certification Institute (GBCI) (first year only). These LEED certification levels will be used to determine each rebate rate:

Certified/Silver
Gold
Platinum

Please see the application for rebate amounts.

For all specifications and guidance on this rebate, please reference LEED – EA prerequisites minimum energy performance (usgbc.org).

Energy savings analysis

Applicants must utilize one of the GBCI approved software tools to provide a whole building simulation energy model. The proposed model must reflect the designed system, and be verified to match the mechanical, architectural, and electrical drawings and schedules. Ultimately, rebates will be paid upon receiving LEED certification at the savings value that is validated by GBCI during the certification process.

Electrical energy savings =
1 kWh per GBCI validation = 1 kWh savings

Natural gas fuel savings =
1 Mcf per GBCI validation = 1 Mcf savings

Projects are not allowed to take credit for savings above baseline for systems utilizing renewable energy.

Supporting documentation

In addition to required documentation as described in the policies and procedures manual, please attach supporting documentation including, but not limited to, the following

- LEED certification project review report and LEED reviewers comments
- LEED – EA prerequisites minimum energy performance
- All supporting documentation submitted with the LEED template for this energy and atmosphere prerequisite.

Trane TRACE	Carrier HAP	DOE2, eQuest or Visual DOE	Energy Plus
LEED summary report	Building simulation report: LEED summary report	Building energy performance (BEPS)	Annual building utility performance summary (ABOPS)
Energy cost budget/ PRM summary	Unmet load reports (for all plants and systems)	System design parameters (SV-A)	System summary (showing the unmet load)
Energy consumption summary reports	Systems energy budget by energy source	Details for exterior surfaces (LV-D)	
Performance rating method details	Systems input data reports		
Equipment energy consumption	Wall constructions		
Entered values report (for all rooms and systems)			

For all projects, provide the above reports corresponding to the modeling software used on your project.

Building Operator Certification®

Building Operator Certification®

DTE is now offering full tuition reimbursement for Building Operator Certification® (BOC) when a member of your organization successfully completes the Level I Course - Building Systems Maintenance. This reimbursement is in partnership with Consumers Energy, the Michigan Energy Office, the Lansing Board of Water and Light, as well as the Department of Environment, Great Lakes, and Energy (EGLE).

Depending on the size of your facility, one person may apply per 194,500 square feet of building size. Up to five employees may apply for this rebate per facility.

Your steps to success

1. Sign up for training at boccentral.org
2. Successfully complete BOC Level I Course
3. Apply for tuition reimbursement or contact us and we'll process the rebate for you

Apply for reimbursement or find out more at dteenergy.com/business

Rebate guidelines

Building Operator Certification® (BOC) is a nationally recognized training and certification program focusing on energy efficient building operations and preventative maintenance procedures. Facilities with BOC graduates are proven to save energy, have lower energy bills, and offer improved comfort for occupants. Average annual per participant energy savings are estimated to be 100,500 kWh and 1,400 therms per year.

To receive full tuition reimbursement, a building professional must attend and pass to earn their certificate of completion in the Level I - Building Systems Maintenance course which is administered by the Midwest Energy Efficiency Alliance (MEEA).

The level I BOC training includes nearly 74 hours of virtual classroom and project work (7.4 CEUs) in building systems operation maintenance. To complete the training, participants must pass required course exams and complete assigned projects.

Terms and conditions

In order for you to participate in the Building Operator Certification® (BOC) training program, your employer must be a DTE utility commercial customer. The program requires that no more than five representatives of your company attend and pass the Level I training course as administered by MEEA.

MEEA is to be paid in full for the tuition associated with this training program. Upon successful completion, you may apply for tuition reimbursement through our application process. You must register for the course online at boccentral.org/training.

In order to participate, the facility must be at least 50,000 square feet or larger. One person may apply per 194,500 square feet of building size. A facility is allowed a maximum of five employees to attend per five year period. A facility is defined as one business associated with one or more natural gas or electric meters. DTE must be the electric and/or natural gas provider for the facility in order to be eligible for tuition reimbursement from DTE.

Reimbursements through this program are subject to availability of program funds and compliance with program terms and conditions. This offer is available for a limited time and is subject to change.

Upon meeting the requirements for the training and submitting a copy of the certificate of completion, reimbursement will be processed based on the availability of program funds and compliance with all requirements.

Any expenses incurred by the participating company or its attendee(s) in conjunction with the program, including, but not limited to parking, lodging, etc., will not be reimbursed by DTE. DTE reserves the right to cancel the reimbursement program for any reason at any time.

How to apply

To apply for this rebate, log on to dteenergy.com/business/application, complete the applicant information fields and on the Product Entry tab, search for Building Operator Certification and select the appropriate sub-category. You must include proof successful completion of the course, which must be uploaded and submitted with your online application.

Appendix

Measure ref #: L-1A

LED T8 linear replacement lamp

Product description

LED T8 Linear replacement lamps are the ideal energy savings choice when upgrading tranditional linear T8 or T12 fluorescent lamps in fixtures containing standard G13 (medium bi-pin) sockets. The LED T8 lamps are designed to provide appropriate light levels while utilizing a dedicated internal driver and require non-shunted G13 medium bi-pin lamp holders.

Features

- 2' &4' lamps are DesignLights Consortium® (DLC) qualified
- Universal Voltage: 120V-277V applications
- Color rendering index (CRI): >82
- 50,000 hour life, 100,000 hours (10 year warranty)
- THD <20%
- High power factor: >.90
- Easy retrofit into most common linear fluorescent fixtures
- Simple ballast bypass
- Instant on
- Mercury free and virtually no UV or IR light
- Non-dimmable
- Suitable for enclosed fixture
- Half aluminum, half plastic construction
- Five year limited warranty (10 year optional)

Typical order example

Please be sure to underline/highlight the specific model being installed

Family	Wattage	Lamp type	Power connection	Length	CCT	Warranty
L = LED linear	10 = 10W (2ft & 3ft only) **15 = 15W (4ft only)** 18 = 18W (4ft only) 22 = 22W (4ft & 5ft only) 31 = 31W (6ft only)	**T8 = T8 Tube**	**SE = Single end**	2 = 2ft 3 = 3ft **4 = 4ft** 5 = 5ft 6 = 6ft	35 = 3500K **41 = 4100K** 50 = 5000K 65 = 6500K	(Omit) = 5 years -10 = 10 years

Accessories

Order code	Model number	Description	Accessories image
59249	P65GHTD	P65 Low profile non-shunted lamp holder	

XYZ Lighting Co.

123 W. 7 Mile Road
Detroit, MI 48111
313.123.4567

Invoice 98765-43

Date: August 1, 2025

Customer ID: 23-53013
Purchase Order #

Ship To (If Different):

Sold to:
John Hancock
123 Happy Street
Detroit, MI 48123

Ref #	QTY	Description	Unit Price	Total Price
L-1A	64	4 ft. 18W LED (32 2-lamp fixtures)	$10.00	$640.00
L-1B	40	4 ft. 22W LED (10 4-lamp fixtures)	$12.00	$480.00
L-2A	14	150W LED High Bay	$150.00	$2,100.00
LL-22D	8	80W Exterior LED Wallpack	$80.00	$640.00

Special Notes and Instructions

Subtotal	$ 3,860.00
Discount	$ -
Tax	
S & H	$ -
Total	**$ 3,860.00**

Thank you for your business!

XYZ Lighting Co.
123 W. 7 Mile Road • Detroit, MI 48111 • 313.123.4567 • xyzlighting@gmail.com

Terms and conditions

The energy optimization measures listed within are being/have been installed in a qualifying time frame, at a qualifying facility and are not for resale. Additional program terms and conditions can be found in the Policies and Procedures Manual.

I understand that in the event this application received a reservation, that reservation is not a guarantee of payment. Rebate payment will be based upon the final application meeting the program terms and conditions, and the availability of funds.

Selected terms and conditions include:
1. Final applications and all required documentation must be received within 60 days of project completion or by Dec 1., 2025, whichever comes first. Incomplete applications, missing documents or applications submitted after that date will result in the project being cancelled.

2. The program has a limited budget. Applications will be processed until allocated funds are reserved or spent.

3. All equipment must be purchased and installed prior to submitting the final application.

4. Applicant agrees to inspection and measurement activities by the utility company or its representative of both project payment and equipment installation for up to five years from the date of equipment installation.

5. Rebates may be taxable and the applicant is solely responsible for the payment of any resulting taxes. Rebates will be reported to the IRS, unless the applicant is exempt.

6. The applicant may be required to refund some or all of the rebates if the measures do not remain (or were not) installed for a period of five (5) years or the end of the product life, whichever is less.

7. Materials removed, including lamps and PCB ballasts, must be permanently taken out of service and disposed of in accordance with federal and state laws or regulation and local codes and ordinances. The applicant is responsible for being aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at www.epa.gov/wastes.

8. For certain measures, the rebate amount will be determined based on the estimated energy savings. The applicant may be required to provide documentation on energy savings calculations and assumptions. The utility company will make the final determination of the energy savings and thus the rebate amount to be paid.

9. The utility company has no obligations regarding and does not endorse or guarantee any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures.

10. Payment of rebates under the program and/or evaluation of applications for rebates shall not deem the utility company or any of its affiliates, employees or agents to be responsible for any work completed in connection herewith. Applicant fully releases the utility company from any and all claims it may have against the utility company in connection with this application, the rebates or the work performed in connection with them. In addition, applicant agrees to defend, indemnify and hold the utility company harmless from and against any and all claims, losses, demands or lawsuits by any third parties arising in connection with this application, the payment or nonpayment of rebates or any work performed in connection with them.

11. The utility company reserves the right to associate with your business and participation in the rebate program for promotion and advertising purposes. See the Policies and Procedures Manual for more on promotional co-branding.

12. Applicant acknowledges that Federal Energy Regulatory Commission (FERC) Order issued on June 1, 2012, at Docket No. ER11-4081-000 ("FERC Order") approves of the inclusion of energy efficiency resources as planning resources in a utility's resource adequacy plan (all italicized terms as defined in the FERC Order). Accordingly, applicant and the utility company agree that all such rights afforded with respect to energy efficiency resources, including but not limited to the right to identify them as a planning resource so as to include them in a resource adequacy plan, shall inure exclusively and fully to the utility company. Applicant agrees that it will not claim ownership in such energy efficiency resources for purposes of identifying them as a planning resource in accord with the FERC Order or include them in a resource adequacy plan.

I have read and understand the measure specifications and Program Guidelines set forth in the application and the Program Policy and Procedures Manual and agree to abide by those requirements. Furthermore, I concur that I must meet all eligibility criteria in order to be paid under this Program and not receive rebates from any other utility for the same project.

I certify that the information on this application is true and accurate. I understand that any misrepresentation of information – intentional or otherwise – that results in unjustified and/or unsubstantiated rebates being awarded to me (the customer) will prompt action by the utility company and/or its agent to recoup such funds from me and may include additional legal action commensurate with the seriousness of the event.

I acknowledge and understand that it is necessary for the utility company to store, use and share the information contained in this application, as well as information collected in connection with this project, including but not limited to my business name, address, account number and energy consumption data ("Customer Data") for various purposes. Therefore, I hereby authorize the utility company to collect, store and use the Customer Data for internal purposes and to present me with other energy saving opportunities. I further authorize the utility company to share the Customer Data with third party vendors/contractors who are doing work on the utility company's behalf.

Apply online at
dteenergy.com/business

Contact us for assistance at
855.748.2525
or
saveenergy@dteenergy.com