

Pacific Gas and Electric Company
Energy-efficiency Rebates for Your Business

Agriculture and Food Processing Rebate Catalog

Saving energy is good business







Why Saving Energy Is Good Business.

Energy is a key resource for farms and food processing facilities. Smart energy management can be a powerful tool in addressing stricter regulatory standards and rising energy costs. The benefits of managing your energy go far beyond direct cost savings. Buildings are more comfortable and property value increases. Production can increase with fewer work stoppages and less health and safety risks. Equipment life is extended. You may even be able to improve product quality, thanks to better, more efficient cooling and refrigeration.

This catalog is filled with Pacific Gas and Electric Company (PG&E) rebates to help you use energy more efficiently and save money in the process, realize a quicker return on your investments and stay on top of trends in sustainability.

Want Help? Call PG&E's Agricultural Customer Service Center.

Maybe you are looking at this catalog because you have worked with us to conduct an energy audit and you are now selecting the equipment you want to upgrade. Or, maybe this is your first look at the money-saving solutions we offer your business. Either way, we are here to help you make smart decisions about all things energy-related. Contact your local PG&E account representative or call our **Agricultural Customer Service Center** at **1-877-311-FARM (3276)**.

General Rebate Requirements:

Carefully read the specifications in this catalog to determine if you are installing qualifying products, and note the following requirements:

- To qualify for energy-savings rebates, you must have an electricity and/or natural gas account with PG&E at the installation address.
- All installations must be new or retrofitted and replace a previously-installed product, unless otherwise noted.
- For lighting, you must attach the manufacturer's specification sheet to each application documenting the characteristics of lamps, ballasts and fixtures.
- Funding for this program is limited and available on a first-come, first-served basis until allocated funds are exhausted, or the program ends, whichever comes first. These rebates may be modified or terminated without prior notice. Additional terms and conditions may apply.

Additional rebates on qualifying products are available for agriculture and food processing customers through our Energy-efficiency Rebates for Your Business program. Visit www.pge.com/ag for more information or call the **Agriculture Customer Service Center** at **1-877-311-FARM (3276)**. Apply or check the status of your rebate online through eRebates at www.pge.com/erebates.



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Boilers and Water Heating

Direct Contact Water Heaters

In direct contact water heaters, water is sprayed downward through a vertical chamber that serves as a flue for combustion gases. Because the hot combustion gases heat the water directly, this water heating system is more efficient than traditional boilers. Plus, these water heaters can operate at atmospheric pressure, which avoids the safety hazards and insurance premiums that can come with pressurized boiler operation.

Requirements:

- Rebate covers direct contact water heaters for process end-uses, typically in North American Industry Classification System (NAICS) codes 31 to 33, but other NAICS codes may apply.
- Heater must meet efficiency requirements based on input ratings shown in the *Direct Contact Water Heater Rebate* table to the right.
- Installation address must have a commercial natural gas account with PG&E.

Exclusions:

Water heaters used primarily for domestic hot water, space conditioning, pools or spas do not qualify for this rebate.

Direct Contact Water Heater Rebate

Water Heater Input Rating	Required Efficiency <small>[exceeds Title 20 and 24 standards]</small>
≤ 300 MBtu/h	AFUE ≥ 88%
> 300 MBtu/h	Thermal efficiency > 90%

Rebate Code	Description	Rebate/ Unit Measure
H16	Direct Contact Water Heater	\$2/MBtu/h

Large Domestic Hot Water Boilers

Today's new high-efficiency hot water boilers use better materials and combustion controls to transfer more heat generated by burning gas to the water, thus requiring less energy for the same hot water output.

Requirements:

- Applicant must be a commercial end-use customer.
- Only boilers with an input rating greater than 75,000 Btu/h qualify.
- Boiler must meet a minimum thermal efficiency of 84 percent or higher.

Exclusions:

Space conditioning and industrial (process) end-use boilers do not qualify for this rebate.

Application process:

Applicant must include a manufacturer's specification sheet documenting input rating and efficiency.

Rebate Code	Description	Rebate/ Unit Measure
H105	Large Domestic Hot Water Boiler	\$1.50/MBtu/h



Space Heating Boilers

Purchase and install a qualifying space heating boiler and PG&E will help pay for it.

Next-generation, high-efficiency, space-heating boilers use better materials and combustion controls to transfer more heat generated by burning gas to the water or steam circulated to heat the facility.

Requirements:

- Must be used for space heating for human comfort per California Energy Commission (CEC) Title 20 and 24.
- Must provide with rebate application the manufacturer's specifications sheet showing specified efficiency rating.

Application process:

Applicant must include a manufacturer's specification sheet documenting type, input rating and efficiency.

Space Heater Boiler Rebates

Rebate Code	Description	Rebate/ Unit Measure
HV011	Space heating atmospheric water boiler AFUE \geq 84.5% and input rating $<$ 300 MBtu/h	\$1/MBtu/h
HV012	Space heating forced draft water boiler AFUE \geq 84.5% and input rating $<$ 300 MBtu/h	\$1/MBtu/h
HV013	Space heating condensing water boiler AFUE \geq 94% and input rating $<$ 300 MBtu/h	\$2/MBtu/h
HV014	Space heating atmospheric water boiler thermal efficiency of \geq 85% and input rating 300 MBtu/h and \leq 2,500 MBtu/h	\$1/MBtu/h
HV015	Space heating forced draft water boiler thermal efficiency of \geq 85% and input rating 300 MBtu/h and \leq 2,500 MBtu/h	\$1/MBtu/h
HV016	Space heating condensing water boiler thermal efficiency of \geq 94% and input rating 300 MBtu/h and \leq 2,500 MBtu/h	\$2/MBtu/h
HV017	Space heating atmospheric water boiler combustion efficiency of \geq 85% and input rating $>$ 2,500 MBtu/h	\$1/MBtu/h
HV018	Space heating forced draft water boiler combustion efficiency of \geq 85% or 83% TE and input rating $>$ 2,500 MBtu/h	\$1/MBtu/h
HV019	Space heating condensing water boiler thermal efficiency of \geq 94% and input rating $>$ 2,500 MBtu/h	\$2/MBtu/h
HV020	Space heating atmospheric steam boiler AFUE \geq 82% and input rating $<$ 300 MBtu/h	\$1/MBtu/h
HV021	Space heating forced draft steam boiler AFUE \geq 82% and input rating $<$ 300 MBtu/h	\$1/MBtu/h
HV022	Space heating atmospheric steam boiler thermal efficiency of \geq 85% and input rating 300 MBtu/h and \leq 2,500 MBtu/h	\$1/MBtu/h
HV023	Space heating forced draft steam boiler thermal efficiency of \geq 85% and input rating 300 MBtu/h and \leq 2,500 MBtu/h	\$1/MBtu/h
HV024	Space heating atmospheric steam boiler combustion efficiency of \geq 80% or 81% TE and input rating $>$ 2,500 MBtu/h	\$1/MBtu/h
HV025	Space heating forced draft steam boiler combustion efficiency of \geq 80% or 81% TE and input rating $>$ 2,500 MBtu/h	\$1/MBtu/h

Boilers and Water Heating

(continued)



Steam Traps

Steam traps are devices that remove condensate and air while preventing or minimizing steam leakage. Replacing failed or failure-prone steam traps is an easy way to conserve energy with a low investment and fast payback.

Requirements:

- Commercial steam traps are for end-use customers in agricultural facilities, such as a cannery or a greenhouse.
- New commercial steam traps must replace, one-for-one, existing old or failed steam traps.
- Industrial steam traps are for end-use customers who manufacture a saleable product (some exceptions apply). New industrial steam traps must replace, one-for-one, existing failed steam traps.
- For industrial low-pressure steam traps (rebate code H201) and high-pressure steam traps (rebate code H202), the following conditions must be met:
 - Steam trap must replace a failed industrial steam trap.
 - Facilities with **less than** 100 existing industrial steam traps at a given location must fill out a preinstallation datasheet. To receive the datasheet, please contact your PG&E account representative or call our **Agricultural Customer Service Center** at [1-877-311-FARM \(3276\)](tel:1-877-311-FARM).
 - Facilities with **more than** 100 existing industrial steam traps at a given location must undergo a steam trap measurement survey before installation. To schedule a preinstallation steam trap measurement survey, please contact your PG&E account representative or call our **Agricultural Customer Service Center** at [1-877-311-FARM \(3276\)](tel:1-877-311-FARM).
- Application must be accompanied by the manufacturer's specification sheet for the steam trap that replaces the existing trap, as well as the invoice for the purchase.
- Installation address must have a commercial natural gas account with PG&E.

Exclusions:

Please note that new construction projects are not eligible for this rebate.

Rebate Code	Description	Rebate/ Unit Measure
H201	Industrial Low-pressure Steam Traps ≤ 15 PSIG	\$100/unit
H202	Industrial High-pressure Steam Traps > 15 PSIG	\$290/unit

Greenhouses

Greenhouse Heat Curtains

Greenhouse heat curtains decrease nighttime heat losses and can also provide shading to control light levels and reduce daytime temperatures. This reduces energy costs and helps promote better plant growth by reducing temperature variability.

Requirements:

- Only interior curtains installed in existing gas-heated greenhouses for heat retention and for agricultural use qualify.
- Rebate only applies to a curtain installation for one of the following:
 - Installation of new curtain where none previously existed
 - Replacement of an existing curtain that is no longer functional
- Curtain must be installed above the conditioned area where the gas heat source provides hot air to plant and seed species.
- Curtain must be designed by a manufacturer to be a heat curtain.
- Curtain must have a natural gas savings rating that meets or exceeds 40 percent.
- Curtain must have a warranty/product life of five years.
- Installation address must have a commercial natural gas account with PG&E.

Installation process:

Installation must allow curtain to be automatically or manually moved into place.

Exclusions:

- Rebate amount is for square footage of new heat curtain and cannot exceed the square footage of the greenhouse floor.
- Overhang and overlap of curtain material cannot be included in the square footage calculation.

Application process:

Applicant must include the manufacturer's specification sheet documenting the type of heat curtain, the heat curtain energy-savings rating and warranty/product life requirements to the left.

Rebate Code	Description	Rebate/ Unit Measure
A10	Greenhouse Heat Curtains	\$0.20/sq. ft.



Infrared Film for Greenhouses

Greenhouse infrared film helps minimize heat gain during the day, reducing the energy that is required to run the ventilation fans, while helping to prevent vital growth-promoting heat from escaping at night.

Requirements:

- Film must be infrared, anti-condensate, polyethylene plastic with a minimum thickness of six millimeters.
- Film must be for an existing, heated greenhouse.
- Installation address must have a commercial natural gas account with PG&E.

Exclusions:

Rebate does not apply to new construction.

Application process:

- Applicant must list square footage on invoice.
- Applicant must include the manufacturer's specification sheet documenting type of infrared film.

Rebate Code	Description	Rebate/ Unit Measure
A102	Infrared Film for Greenhouses	\$0.05/sq. ft.

Heating, Ventilation and Air Conditioning

Central Natural Gas Furnaces

Today's high-efficiency central natural gas furnaces are equipped with features that ensure a higher percentage of a fuel's Btu content is turned into heat and less is wasted through exhaust gases, including electronic ignition technology, a secondary heat exchanger to condense the flue gases and highly efficient exhaust fans.

Requirements:

- To qualify, the central natural gas forced air furnace must have an Annual Fuel Utilization Efficiency (AFUE) rating of:
 - 95 to 96.9 percent for the \$150 rebate
 - 97 percent or greater for the \$250 rebate
- Only residential furnaces installed in a small commercial setting qualify for this rebate. To find a list of qualifying equipment that meets or exceeds the program requirements, go to www.ahridirectory.org/ahridirectory. In the Residential Directory, select "Furnace." Then indicate the AFUE minimum in the appropriate box and search.

Rebate Code	Description	Rebate/ Unit Measure
SA17	Central Natural Gas Furnace 95–96.9% AFUE without VSM	\$150/unit
SA19	Central Natural Gas Furnace ≥ 97% AFUE without VSM	\$250/unit

Variable Frequency Drives (VFD) for HVAC Fans

Variable frequency drives (VFDs) improve the efficiency of HVAC fans by enabling them to respond more precisely to a building's heat and cooling load. Installing VFDs on HVAC fan motors helps prevent energy waste, reduce mechanical stress and prolong system life.

Requirements:

- Drives must be applied to existing HVAC supply, return or exhaust air fans only.
- Drives are eligible for this rebate only if throttling devices, such as inlet vanes or bypass dampers, are removed or permanently disabled.
- Installation address must have a commercial electric account with PG&E.

Exclusions:

- Fan size greater than 100 horsepower is not eligible for this rebate.
- VFDs on cooling tower fans are not eligible for this rebate.

Rebate Code	Description	Rebate/ Unit Measure
H148	Variable Frequency Drive for HVAC Fan	\$80/hp



Advanced Digital Economizer Control System for Packaged HVAC Unit

Retrofit your existing analog or nonfunctional economizer controller for your packaged HVAC unit with an Advanced Digital Economizer Control (ADEC) system. ADECs detect and report problems with sensors, dampers and other components so that energy efficiency can be maintained.

Requirements:

- Customer must pick correct measure code for the type of packaged HVAC unit and enter the HVAC unit's tons of AC capacity on the application as "Quantity." See the HVAC unit's nameplate for cooling capacity. (1 ton AC capacity = 12,000 Btu per hour.)
- Customer must replace existing analog or nonfunctional economizer control system with an ADEC system.
- Customer must assure that controls are installed and operate according to current applicable building and energy codes. Maximum rebate is \$300 per ADEC system.
- Installation address must have a commercial electric account with PG&E.
- Cannot be combined with Demand Controlled Ventilation or Enhanced Ventilation Control rebate offers for the same HVAC unit.



Rebate Code	Description	Rebate/ Unit Measure
HA83	Replace Analog Economizer Control System with ADEC on Variable Air Volume Unit	\$20/ton (max \$300)
HA84	Replace Analog Economizer Control System with ADEC on Heat Pump Unit	\$20/ton (max \$300)
HA85	Replace Analog Economizer Control System with ADEC on AC or Gas Pack Unit	\$20/ton (max \$300)

Demand Controlled Ventilation (DCV) for Packaged HVAC Unit

Add Demand Controlled Ventilation (DCV) to your packaged HVAC unit. DCV enables your economizer to reduce the amount of outside air when the conditioned space is occupied by fewer people than the design capacity. A CO2 sensor provides the occupancy signal to the Advanced Digital Economizer Control system. This is a good energy-efficiency measure for conditioned spaces with highly variable or low occupancy.

Requirements:

- Customer must pick correct measure code for the type of packaged HVAC unit and enter the HVAC unit's tons of AC capacity on the application as "Quantity." See the HVAC unit's nameplate for cooling capacity. (1 ton AC capacity = 12,000 Btu per hour.)
- Rebate is based on the HVAC unit's cooling capacity and is maxed at \$1,500 per ADEC + CO2 sensor system or \$600 for CO2 sensor.
- Customer must assure that controls are installed and operate according to current applicable building and energy codes.
- Customer must install DCV on existing operational packaged HVAC unit.
- Installer and manufacturer must warranty equipment for at least two years for parts and labor.
- Installation address must have a commercial electric account with PG&E.
- Cannot be combined with Advanced Digital Economizer Controller or Enhanced Ventilation Control rebate offers for the same HVAC unit.

Rebate Code	Description	Rebate/ Unit Measure
HV026	Add Demand Controlled Ventilation (ADEC and CO2 Sensor) to Packaged HVAC Unit with Gas Heat	\$100/ton (max \$1500)
HV028	Add Demand Controlled Ventilation (ADEC and CO2 Sensor) to Packaged AC Unit	\$100/ton (max \$1500)
HV030	Add Demand Controlled Ventilation (ADEC and CO2 Sensor) to Heat Pump	\$100/ton (max \$1500)
HV027	Add Demand Controlled Ventilation (CO2 Sensor) to Packaged HVAC Unit with Gas Heat with ADEC	\$40/ton (max \$600)
HV029	Add Demand Controlled Ventilation (CO2 Sensor) to Packaged AC Unit with ADEC	\$40/ton (max \$600)
HV031	Add Demand Controlled Ventilation (CO2 Sensor) to Heat Pump with ADEC	\$40/ton (max \$600)

Heating, Ventilation and Air Conditioning

(continued)

Enhanced Ventilation Control for Packaged HVAC Unit

Add Enhanced Ventilation Control (EVC) to your packaged HVAC unit. EVC kits, such as Transformative Wave Catalyst adds variable speed, CO2 sensors and advanced digital economizer controls to existing packaged HVAC units. These retrofit add-on technologies can reduce the ventilation rate and outside air when the conditioned space is occupied by fewer people than the design capacity. This is a good energy-efficiency measure for conditioned spaces with highly variable or low occupancy.

Requirements:

- Customer must pick correct measure code for the type of packaged HVAC unit and enter the HVAC unit's tons of AC capacity on the application as "Quantity." See the HVAC unit's nameplate for cooling capacity. (1 ton AC capacity = 12,000 Btu per hour.)
- Customer must assure that controls are installed and operate according to current applicable building and energy codes.
- Customer must install EVC on existing operational package HVAC unit.
- Installation address must have a commercial electric account with PG&E.
- Cannot be combined with Advanced Digital Economizer Controller or Enhanced Ventilation Control rebate offers for the same HVAC unit.

Exclusions:

Variable Air Volume (VAV) packaged HVAC units are excluded.

Rebate Code	Description	Rebate/ Unit Measure
SA07	Add Enhanced Ventilation Control (ADEC+CO2 sensor+VFD) to AC or Gas Pack Unit	\$155/ton
SA08	Add Enhanced Ventilation Control (ADEC+CO2 sensor+VFD+NEMA Premium motor) to AC or Gas Pack Unit	\$190/ton
SA09	Add Enhanced Ventilation Control (ADEC+CO2 sensor+VFD+Permanent Mag motor) to AC or Gas Pack Unit	\$194/ton
SA10	Add Enhanced Ventilation Control (ADEC+CO2 sensor+VFD) to Heat Pump Unit	\$155/ton
SA11	Add Enhanced Ventilation Control (ADEC+CO2 sensor+VFD+NEMA Premium motor) to Heat Pump Unit	\$190/ton
SA12	Add Enhanced Ventilation Control (ADEC+CO2 Sensor+VFD+Permanent Mag Motor) to Heat Pump Unit	\$194/ton

Notched V-Belt Replacing Solid V-Belt

If you have existing solid v-belts driving the packaged HVAC fan(s), you can qualify for this rebate if you replace those with notched v-belts.

Requirements:

- Customer must pick correct measure code for the type of packaged HVAC unit and enter the HVAC unit's tons of AC capacity on the application as "Quantity."
- Customer must request separate rebate for each HVAC unit retrofitted with notched belts. See the HVAC unit's nameplate. (1 ton AC capacity = 12,000 Btu per hour.)
- Maximum rebate is \$30 per motor with solid v-belts retrofit with notched v-belts.
- Customer must replace solid v-belt(s) with notched v-belt(s) on HVAC supply, return or exhaust motor.
- Installation address must have a commercial electric account with PG&E.

Exclusions:

Packaged HVAC units already fitted with notched v-belts do not qualify. Only units with solid v-belts qualify.

Rebate Code	Description	Rebate/ Unit Measure
SA13	Replace solid v-belt with notched belt on AC or Gas Pack Unit	\$8/ton (max \$30/motor)
SA14	Replace solid v-belt with notched belt on Heat Pump Unit	\$8/ton (max \$30/motor)
SA15	Replace solid v-belt with notched belt on Variable Air Volume Unit	\$8/ton (max \$30/motor)



7-day Programmable Thermostat

If the existing thermostat does not provide 7-day scheduling of fan and temperature settings, or if the packaged HVAC unit has an economizer and the existing thermostat cannot call for first-stage cooling with the economizer only, then you qualify for this retrofit measure. The replacement thermostat must be set during unoccupied hours to call for heating at < 55 degrees Fahrenheit and call for cooling at > 85 degrees Fahrenheit. Occupied comfort settings must be in the range of 72 to 75 degrees Fahrenheit for cooling and 65 to 68 degrees Fahrenheit for heating.

Requirements:

- Customer must replace an existing non-Title 24 conforming thermostat with a Title 24 conforming thermostat.
- Rebate is based on the HVAC unit's cooling capacity and is maxed at \$300 per t-stat installation.
- Customer must assure thermostat is installed, programmed and operates per current applicable building and energy codes.
- Installation address must have a commercial electric account with PG&E.

Rebate Code	Description	Rebate/ Unit Measure
T314	Replace Non-conforming Title 24 Thermostat with Conforming Programmable Thermostat on Package HVAC Unit	\$14/ton (max \$300)

Exclusions:

Operable 7-day programmable thermostats or thermostats required by code triggering project.



Insulation

Pipe Insulation

Optimum insulation levels in pipes can help to reduce heat gain and cooling loads, resulting in significant energy savings at a relatively low cost while also helping to ensure materials stay within certain temperature limits so that key processes will not be interrupted.

Requirements:

- Minimum-qualifying nominal pipe diameter is 0.5 inch and minimum-qualifying insulation thickness is 1 inch.
- The pipes must transfer fluid directly from gas-fired equipment, and insulation materials/accessories must be installed according to manufacturer instructions.
- Application must include the manufacturer's name, insulation material type and material K-value rating.
- Installation address must have a commercial natural gas account with PG&E. Only customer accounts with annual use of less than 250,000 therms qualify.

Exclusions:

- Pipe with preexisting insulation does not qualify, and this rebate cannot be used for the replacement of old or damaged insulation.
- California Building Energy Efficiency Standards (Title 24), Section 123, establishes requirements for pipe insulation in the design and installation of space-conditioning and service water heating systems and equipment. Any pipe requiring insulation according to these standards does not qualify for a rebate. Details are available at www.energy.ca.gov/title24.
- Pipe insulation for exposed steam and hot-water pipes within 7 feet of the floor that are not otherwise guarded in such a manner as to prevent contact does not qualify for rebate. Occupational Safety and Health Administration (OSHA) standards require that exposed, heated surfaces be covered to prevent injury.

Rebate Code	Description	Rebate/ Unit Measure
H664	Pipe Insulation (1" thick), installed on hot water pipes with a diameter between 0.5" and 1", which are connected to gas-fired equipment	\$2/linear ft.
H665	Pipe Insulation (1" thick), installed on hot water pipes with a diameter > 1", which are connected to gas-fired equipment	\$2/linear ft.
H666	Pipe Insulation (1" thick), installed on low-pressure steam pipes (< 15 PSIG) with a diameter between 0.5" and 1", which are connected to gas-fired equipment	\$3/linear ft.
H667	Pipe Insulation (1" thick), installed on low-pressure steam pipes (< 15 PSIG) with a diameter > 1", which are connected to gas-fired equipment	\$3/linear ft.
H668	Pipe Insulation (1" thick), installed on high-pressure steam pipes (≥ 15 PSIG) with a diameter between 0.5" and 1", which are connected to gas-fired equipment	\$3/linear ft.
H669	Pipe Insulation (1" thick), installed on high-pressure steam pipes (≥ 15 PSIG) with a diameter > 1", which are connected to gas-fired equipment	\$3/linear ft.

Tank Insulation

Adding insulation on a bare surface like a process tank greatly reduces heat loss to ambient air, achieving significant energy savings at a relatively low cost, while also helping to ensure the temperature inside the tank stays within certain limits so that the manufacturing process will not be interrupted.

Requirements:

- One or two inches of fiberglass or foam insulation must be added to existing bare liquid, solution storage or transfer tanks. The insulation thickness and tank solution temperature will determine the rebate amount.
- The tanks must be coupled to gas-fired commercial or industrial equipment that transfers heat to the contained liquid or solution.
- Insulation materials and accessories must be installed according to manufacturer instructions.
- Application must include the manufacturer's name, insulation material type and material K-value rating.
- Installation address must have a commercial natural gas account with PG&E.

Exclusions:

- Tanks with preexisting insulation do not qualify for a rebate. This rebate cannot be used for the replacement of old or damaged insulation.
- California Building Energy Efficiency Standards (Title 24), Section 123, establishes requirements for tank insulation in the design and installation of space-conditioning and service water heating systems and equipment. Any tank requiring insulation per these standards does not qualify for a rebate. Details are available at www.energy.ca.gov/title24.
- Tanks insulated within 7 feet of the floor do not qualify for rebates. The Occupational Safety and Health Administration (OSHA) standards require that exposed, heated surfaces be covered to prevent injury.

Rebate Code	Description	Rebate/ Unit Measure
H115	1" Tank Insulation, Low Temp. Solution (120° F–170° F)	\$2/sq. ft.
H114	1" Tank Insulation, High Temp. Solution (170° F–200° F)	\$3/sq. ft.
H18	2" Tank Insulation, High Temp. Solution (170° F–200° F)	\$4/sq. ft.





Irrigation

Low-pressure Sprinkler Nozzles



Replacing high-pressure sprinkler nozzles with low-pressure sprinkler nozzles enables you to reduce your irrigation system’s operating pressure, thus reducing the energy it takes to run the pumps—yet still distribute the same volume of water your crops need, with fewer line breaks and less maintenance.

Requirements:

- Customer must convert from a high-pressure sprinkler system nozzle (50 psi operating pressure or more at the sprinkler head) to a low-pressure sprinkler system nozzle specifically designed to produce correct water stream break-up when operated at low pressure. Pressure reduction shall be verified by either (1) post-project pump discharge pressure of 40 psi or less, or (2) comparison of pre-project and post-project pump tests verifying reduction of at least 15 psi.
- New nozzles must replace high-pressure sprinkler nozzles one-for-one and must be designed to provide same flow and radius as pre-existing nozzles.
- A pumping plant analysis must be completed after the replacement to ensure reasonable pumping efficiency. System must have 45 percent overall pumping efficiency or above.
- Hand move or permanent (solid set) systems qualify. Any systems which remain in place through the growing season shall be considered permanent. Systems which are only used for frost protection or crop establishment are not eligible for rebates.
- Installation address must have an agricultural electric account with PG&E.

Exclusions:

- Full replacements of sprinkler heads with plastic equipment or non-impact sprinklers are only accepted upon prior approval by PG&E. For questions on eligibility, talk with your PG&E account representative or call the Agricultural Customer Service Center at the telephone number listed below.
- Microsprinklers are not eligible for this program.
- Not eligible in conjunction with Agricultural Irrigation VFD Measure.

Application process:

- To qualify for this rebate, customer must include a dated invoice that lists the number of nozzles, the manufacturer make/model, and include a copy of the manufacturer’s equipment specification cut sheet of nozzles installed to verify equipment.
- Must include a pumping analysis, completed *after* installation, in order to show overall pumping efficiency, flow rate, and discharge pressure.
- **Optional:** Additional pumping analysis, completed *before* installation that will be used to verify pump pressure reduction.

Rebate Code	Description	Rebate/ Unit Measure
A272	Low-pressure Sprinkler Nozzles Hand Move	\$1.15/nozzle
A273	Low-pressure Sprinkler Nozzles Permanent (Solid Set)	\$1.15/nozzle

Sprinkler-to-drip Irrigation

Replacing a high-pressure sprinkler system with drip irrigation reduces water, energy costs and maintenance costs, and increases yields and revenue. Switching to drip irrigation also enables crops production in those areas where water supplies are depleted or restricted.

Requirements:

- To qualify for this rebate, system must be converted from a high-pressure, impact-type sprinkler irrigation system (50 PSI operating pressure or more at the sprinkler head) to a micro-irrigation system.
- Installation address must have an agricultural electric account with PG&E.

Exclusions:

- Rebate not applicable to new plantings of vineyards or orchards, unless a vineyard or orchard was the previous crop on the field.
- Drip tape systems are not eligible.

Application process:

Applicant must include an assessor's parcel map or other documentation to verify acreage.

Rebate Code	Description	Rebate/ Unit Measure
A266	Sprinkler-to-drip Irrigation Field Vegetables	\$44/acre
A268	Sprinkler-to-drip Irrigation Deciduous Trees	\$44/acre
A269	Sprinkler-to-drip Irrigation Vineyard	\$44/acre

Agricultural Irrigation Pump Overhaul (≤ 25 hp)



Overhauling irrigation pumps enables you to increase your irrigation system's efficiency, thus reducing the energy it takes to run the pumps—yet still distribute the volume of water your crops need, without changing your irrigation system design.

Product must be purchased on or after August 1, 2014.

Requirements:

- The existing pump must be operational prior to the overhaul. Proof of the pump's operating status may be required in order to receive the incentive.
- The horsepower rating of the pump must be less than or equal to (≤) 25 hp.
- The pump type must be one of the following: Submersible Well, Submersible Booster, Centrifugal Booster, Turbine Booster, or Turbine Well
- The pump overhaul must include at least one of the following: Replacing the pump bowl assembly/impeller; trimming the existing impeller on a booster pump; or adjusting the bowl and impeller on a deep well pump.
- If adjusting the bowl and impeller on a deep well pump with semi-open impellers, all impellers in the bowl assembly must run in close proximity (0.003 to 0.007 in) to the next lower bowl after adjustment. (For enclosed impellers, with a principal seal that is parallel to the centerline of the shaft, a close axial adjustment is not necessary.)
- Installation address must have an agricultural electric account with PG&E.

Exclusions:

- Not applicable to industrial pumps; only agricultural, irrigation district, or other irrigation pumps are eligible.
- Not eligible for accounts in Climate Zone 1 or Climate Zone 16.
- Specialty pumps with pre-determined low load factors, such as fire pumps and storm water pumps, do not qualify for incentives.

Application process:

- To qualify for this rebate, the applicant must provide an invoice that includes the detailed scope of work of the overhaul. This scope of work needs to have at least one of the following performed: Replacing the pump bowl assembly/impeller; trimming the existing impeller on a booster pump; or adjusting the bowl and impeller on a deep well pump.
- If horsepower is not indicated on the invoice, the applicant must provide photograph of pump motor nameplate showing pump horsepower is less than or equal to 25 hp.

Rebate Code	Description	Rebate/ Unit Measure
IR001	Submersible Well Pump System Overhaul (≤25hp)	\$75/hp
IR002	Submersible Booster Pump System Overhaul (≤25hp)	\$75/hp
IR003	Centrifugal Booster Pump System Overhaul (≤25hp)	\$75/hp
IR004	Turbine Booster Pump System Overhaul (≤25hp)	\$75/hp
IR005	Turbine Well Pump System Overhaul (≤25hp)	\$75/hp



Agricultural Irrigation Pump Variable Frequency Drive (VFD)

Adding a variable frequency drive to irrigation pumps may enable you to reduce your irrigation system’s operating pressure, thus reducing energy consumed by pumps. Adding a VFD also enables you to vary the flow of water as needed for your irrigation schedules, while providing additional benefits such as soft start capability and enhanced performance of equipment.

Note: A VFD can save energy in cases where pumps and irrigation equipment are oversized or in situations with variable water supply or irrigation flow conditions but are not recommended in all situations. Consult a PG&E expert or an irrigation system engineer for more information.

Product must be purchased on or after August 1, 2014.

Requirements:

- VFDs must be installed as a retrofit of an existing single-speed pump and irrigation system on a productive field, replacing an existing booster or well pump.
- VFDs must be used for control in place of a throttle valve used for controlling the flow/pressure of the pump.
- The allowable horsepower ratings of the well pump motor must be less than 300 hp per motor, and the booster pump motor must be less than 150 hp per motor.
- Applicable to pressurized irrigation system types including sprinklers, microsprinklers, and drip, but excluding flood irrigation.
- VFD must meet quality requirements as specified by IEEE Standard 519-1992, Recommended Practices and Requirements for Harmonic Control in Electrical Systems.
- Pumping application must currently require throttling below full flow to meet irrigation requirements.
- Minimum operation of 1,000 hours per year.
- Installation address must have an agricultural electric account with PG&E.

Exclusions:

- Variable frequency drive must be used to adjust operation of pump to meet flow/pressure requirements and not simply as a soft starter, or for cavitation control.
- The VFD must NOT be for the following pumping applications:
 - A well pump used to fill a reservoir
 - A well pump discharging directly into a canal
 - A mixed flow pump (high volume, low head)
- Not applicable to new plantings of vineyards, orchards, or other field crops, or installations of new wells.
- Not applicable to industrial or commercial pumps; only agricultural irrigation pumps are eligible.
- Not eligible in combination with A272 or A273 (Low-Pressure Sprinkler Nozzles Hand Move or Permanent) incentive.

Application process:

- To qualify for this rebate, customer must supply an invoice that includes the quantity of VFD’s, type (well and/or booster), horsepower rating, area map with physical location of pumps, and the manufacturer make/models of the VFD’s installed.
- Must include copy of manufacturer’s specification sheet of VFD’s installed and a statement that the VFD complies with IEEE Standard 519-1992.

Rebate Code	Description	Rebate/ Unit Measure
IR006	Well Pumps—Variable Frequency Drive (<300hp)	\$40/hp
IR007	Booster Pumps—Variable Frequency Drive (<150hp)	\$40/hp





Lighting

General Lighting Introduction

Light quality is one of the most important influences on workplace performance and business success. It is vital to provide good light quality that is designed to match the task being undertaken and to respect the needs of the occupants. At the same time, it is critical to reduce the amount of energy lighting consumes in order to save money and to bring lighting systems up to date to meet new state and federal energy reduction requirements.

Lighting accounts for nearly 7 percent of total electricity use in industrial and manufacturing facilities, but accounts for almost 40 percent of electricity consumed by building (not process) equipment. As much as 50 percent of current utility costs related to lighting can be cut with energy-efficient lighting. Lighting rebates generally focus on various components, including the lamps (which create light), the fixtures (which house the lamps), the ballasts (which regulate power) and lighting controls.

General rebate requirements:

- To qualify for energy-savings rebates, you must have a commercial electric account with PG&E at the installation address.
- All components must be installed and operational before a rebate application is submitted.
- All new lighting fixtures, retrofit kits and components must carry the appropriate, designated Underwriters Laboratory (UL) or Electrical Testing Laboratory (ETL) label.
- All installations must be installed in accordance with all applicable local, state and national codes and ordinances.
- The manufacturer's specification sheet must be attached to each application documenting the characteristics of lamps, ballasts and fixtures.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp. The maximum replacement fixture wattage listed in the table for each category is typically associated with the highest lamp wattage in that particular range.
- Customer installations that are randomly selected for inspection may be required to provide a site map or acceptable overview of locations noting where the products are installed.



LED High-bay and Low-bay Lighting

Replacing interior high-intensity discharge (HID) or fluorescent high-bay and low-bay fixtures with LED lighting can greatly reduce your energy usage and maintenance costs while improving the light quality and output at floor level. LED lighting uses significantly less energy, lasts far longer, turns on and off instantly and can be equipped with dimmers and motion controls for additional energy savings.

Ideal use:

This advanced lighting technology generates less heat (which helps reduce cooling costs) and provides consistent, reliable high-quality white light, making it ideal for gyms, warehouse and assembly facilities.

Requirements:

- Only LED fixtures or retrofit kits on the list of pre-qualified LED fixtures available at www.pge.com/led in the following categories qualify for this rebate:
 - High-bay Luminaires (fixtures and retrofit kits)
 - Low-bay Luminaires (fixtures and retrofit kits)
 - High-bay Aisle Luminaires (fixtures)
- There must be a one-for-one replacement of linear fluorescent or high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium and standard metal halide.
- Select the measure code based on the **wattage of the replacement fixture**. The “Recommended Existing Lamp Wattage/Type” and “Recommended Minimum Replacement Fixture Lumens” in the table are recommendations based on lumen equivalences.
- Existing lamp wattage is used rather than total fixture wattage, but the input wattage of the LED fixture must be lower than the input wattage of the original equipment.
- Self-ballasted, screw-based lamps and LED tube-style lamps do not qualify.
- The customer or trade professional must submit a product specification sheet, installation instructions and an invoice with the application. All other Business Rebates Application conditions apply.
- A written warranty must be issued to the customer guaranteeing repair or replacement of defective electrical parts (including light source and power supplies) for a minimum of five years from the date of purchase.

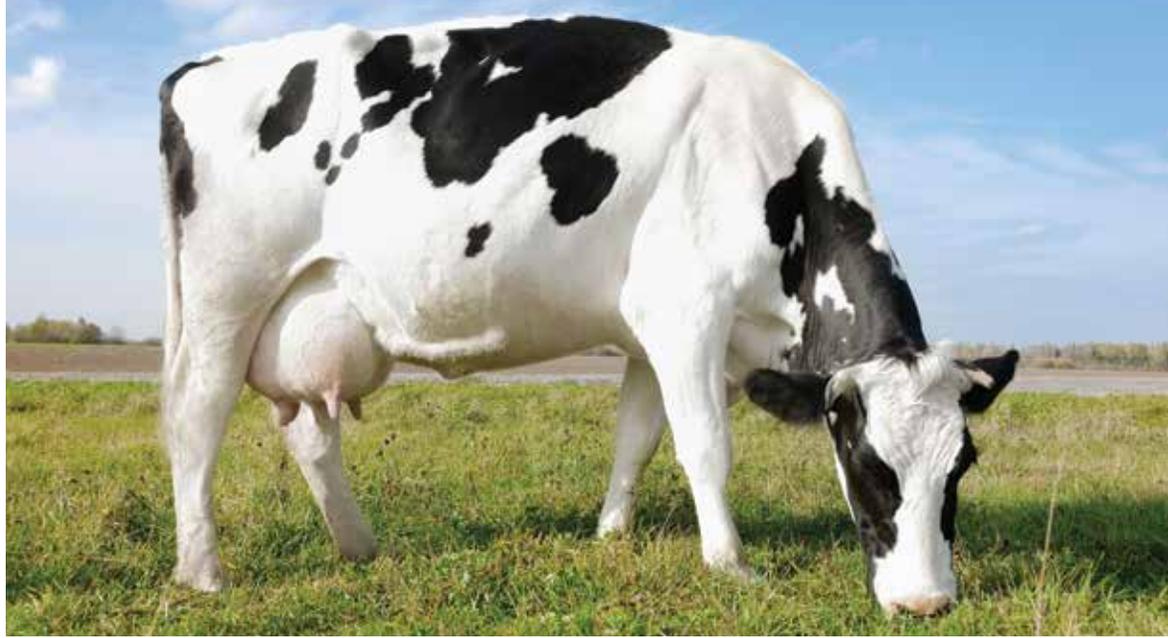
Exclusions:

- Products not listed in the high-bay or low-bay categories above, including LED recessed panels and ambient luminaires, do not qualify for this rebate.
- Other fixture configurations, including interior recessed fixtures and ambient lighting, may be considered under the Customized Retrofit Incentive Program.



LED High-bay and Low-bay Lighting Rebates

Rebate Code	Replacement Fixture Wattage	Recommended Existing Lamp Wattage/Type	Recommended Min. Repl. Fixture Lumens	Rebate/ Unit Measure
LD109	> 500–750 watt	1000 watt PS-MH	43,400	\$300/fixture
LD108	> 320–500 watt	750 watt PS-MH	32,300	\$250/fixture
LD107	> 280–320 watt	450 watt PS-MH	23,900	\$225/fixture
LD106	> 262–280 watt	400 watt PS-MH	21,600	\$190/fixture
LD105	> 220–262 watt	350 watt PS-MH	15,800	\$160/fixture
LD104	> 187–220 watt	320 watt PS-MH	12,900	\$145/fixture
LD103	> 160–187 watt	250 watt PS-MH	11,200	\$125/fixture
LD102	> 131–160 watt	200 watt PS-MH	9,600	\$110/fixture
LD101	40–131 watt	175 watt PS-MH	6,200	\$100/fixture
LD113	> 160–220 watt	T8 Fluorescent 2nd Gen 8L VHLO	11,200	\$125/fixture
LD112	> 131–160 watt	T8 Fluorescent 2nd Gen 6L VHLO	9,600	\$110/fixture
LD111	40–131 watt	T8 Fluorescent 2nd Gen 4L VHLO	6,200	\$100/fixture



LED Exterior Area Lighting

Replacing high-intensity discharge (HID) or incandescent outdoor fixtures with LED lighting can greatly reduce your energy usage and maintenance costs while improving the light quality and output at the ground level.

Ideal use:

LED lighting uses significantly less energy, lasts far longer, goes on and off instantly and can be equipped with occupancy controls for more energy savings. This advanced lighting technology provides reliable, consistent, high-quality white light, making it ideal for parking lots, gas stations, outdoor parking structures, pathway lighting and outdoor wall-mounted lighting.

Requirements:

- Only LED fixtures or retrofit kits on the list of prequalified LED fixtures available at www.pge.com/led in the following categories qualify for this rebate:
 - Outdoor Pole/Arm-mounted Area and Roadway Luminaires (fixtures and retrofit kits)
 - Retrofit Kits for Large Outdoor Pole/Arm-mounted Area and Roadway Luminaires
 - Outdoor Pole/Arm-mounted Decorative Luminaires (fixtures and retrofit kits)
 - Outdoor Wall-mounted Area Luminaires (fixtures and retrofit kits)
 - Bollards
 - Fuel Pump Canopy Luminaires (fixtures and retrofit kits)
 - Parking Garage Luminaires (fixtures and retrofit kits)
- There must be a one-for-one replacement of incandescent or high-intensity discharge (including mercury vapor, high-pressure sodium, low-pressure sodium and standard metal halide) exterior light fixtures.
- The input wattage of the LED fixture must be lower than the input wattage of the original equipment.
- The LEDs must possess less than 20 percent of total harmonic distortion.
- Self-ballasted, screw-based lamps do not qualify.
- A written warranty must be issued to the customer guaranteeing repair or replacement of defective electrical parts (including light source and power supplies) for a minimum of five years from the date of purchase.

Exclusions:

Measures LT007 and LT008 (Installing > 265 watt to 750 watt LED fixtures) are only available for purchases and installations after July 1, 2014.

LED Exterior Area Lighting Rebates

Rebate Code	Description	Rebate/ Unit Measure
LT007	Install > 500-750 watt LED Fixture Replacing HID	\$200/fixture
LT008	Install > 265-500 watt LED Fixture Replacing HID	\$150/fixture
LT009	Install > 225-265 watt LED Fixture Replacing HID	\$125/fixture
LT010	Install > 192-225 watt LED Fixture Replacing HID	\$100/fixture
LT011	Install > 150-192 watt LED Fixture Replacing HID	\$80/fixture
LT012	Install > 110-150 watt LED Fixture Replacing HID	\$70/fixture
LT013	Install > 70-110 watt LED Fixture Replacing HID	\$60/fixture
LT014	Install > 50-70 watt LED Fixture Replacing HID	\$50/fixture
LT015	Install 0-50 watt LED Fixture Replacing HID	\$40/fixture

Interior High-bay Linear Fluorescent Fixtures

Replacing standard metal halide fixtures with next-generation, high-performance interior T8 or T5 linear high bay fluorescent fixtures is an easy way to reduce lighting costs and improve lighting quality and output.

Ideal use:

Unlike standard metal halide, these fluorescent fixtures turn on instantly and do not suffer from color shift. T8 and T5 lamps also offer better color rendering, which helps make retail displays more attractive and improves productivity and employee satisfaction in warehouses and manufacturing spaces.

Requirements:

- Rebates are based on a one-for-one replacement of incandescent or high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium and standard metal halide (or pulse-start metal halide) with new high-performance T8/T5, super T8, T8 VHO or T5 HO interior linear fluorescent fixtures to qualify.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp.
- Additional requirements:
 - All 32-watt T8 lamps must be HP T8 or super T8 lamps and listed on the qualified HP T8 lamp list at www.cee1.org.
 - All lamps must be rated equal to or greater than 20,000 hours of average-rated lamp life based on three hours per start (when operated on program rapid-start ballasts).
 - All lamps must have a Color Rendering Index (CRI) that is equal to or greater than 82.
 - All T8 ballasts must be rated as National Electrical Manufacturers Association (NEMA) premium or designated HP electronic ballast as listed on www.cee1.org, T5 HO must be program rapid-start ballasts.

Exclusions:

- Exterior installations do not qualify for this rebate.
- If you apply for this rebate, you will not be eligible for additional rebates under the “Compact Fluorescent Fixtures” category.
- Other fixture configurations, including interior recessed fixtures and ambient lighting, may be considered under the Customized Retrofit Incentive Program.

Additional details:

- **T8 and T5:** Program rapid-start ballasts are designed to provide maximum lamp life in frequent lamp starting applications such as in areas where occupancy sensor controls are used.
- **T8 only:** Instant-start electronic ballasts are the most popular type of electronic ballast today, because they provide maximum energy savings and start lamps without delay.

Interior Linear Fluorescent Fixtures Rebates

Rebate Code	Description	Rebate/ Unit Measure
LT001	> 351–585 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$125/fixture
LT002	> 234–351 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$100/fixture
LT003	> 144–234 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$75/fixture
LT004	> 118–144 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$50/fixture
LT005	> 64–118 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$30/fixture
LT006	≤ 64 watt Linear Fluorescent (HP T8/T5) Fixture Replacing HID/Incandescent Lamp	\$20/fixture



High-bay Compact Fluorescent Fixtures (CFL)

Replacing high-bay incandescent and high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium, standard metal halide and pulse-start metal halide with modern high-bay CFL fixtures is an easy way to reduce lighting costs and improve lighting quality and output. These fixtures use significantly less energy, turn on instantly, offer better color rendering and run cooler, putting less strain on a building's air conditioning.

Ideal use:

With their great energy efficiency and better color rendering capabilities, high-bay CFL fixtures are best used in buildings with ceilings 15 feet and above. These include gyms, retail stores, warehouses, distribution centers, light manufacturing and food processing facilities.

Requirements:

- Fixtures must be only complete, new CFL fixtures to qualify.
- New fixtures must not exceed the maximum "Replacement Fixture Wattage" listed in the *CFL Fixtures Rebates* table to the right for each range of lamp wattage being replaced. New fixture wattage is the total system wattage (lamp and ballast).
- Ballasts must have a power factor greater than or equal to 0.9.
- Rebates are based on a one-for-one replacement of incandescent or high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium, low-pressure sodium, standard metal halide or pulse-start metal halide. Existing lamp wattage is used rather than total fixture wattage (i.e., a 250-watt, high-pressure sodium fixture is a 250-watt base case and qualifies under the L1022 rebate code).
- To calculate the base case wattage for incandescent and fluorescent fixtures with more than one lamp, multiply the number of lamps by the nominal lamp wattage as listed on the lamp label.
- New exterior installations qualify if existing lamps are 100 watts or less.



Exclusions:

- Other fixture configurations and exterior applications greater than 100 watts will be considered under our Customized Retrofit Incentive Program.
- Exterior installations and applications only qualify for rebate code LA00 (see the table below).

CFL Fixtures Rebates

Rebate Code	Existing Lamp Wattage	Replacement Lamp Wattage	Rebate/ Unit Measure
L1014	Interior 400 watt	≤ 244 watt (Tier 1)	\$35/fixture
L1013	Interior 400 watt	≤ 360 watt (Tier 2)	\$20/fixture
L1022	Interior 176–399 watt	≤ 192 watt	\$20/fixture
L1021	Interior 101–175 watt	≤ 128 watt	\$20/fixture
L962	Interior ≤ 100 watt	≤ 70 watt	\$10/fixture
LA00	Exterior ≤ 100 watt	≤ 70 watt	\$10/fixture

Interior Induction Fixtures

Today's modern induction fixtures offer significant improvements over incandescent and high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium, standard metal halide and pulse-start metal halide. Essentially a fluorescent light without electrodes or filaments (the components that frequently cause other bulbs to burn out quickly), induction fixtures provide high energy efficiency, long life, low maintenance costs and high-quality color rendering. They also turn on instantly and work well in low temperatures.

Ideal use:

With their long life and ability to deliver high-quality light, induction fixtures are suitable for nearly any interior application, especially in places where lamp replacement is difficult and expensive or omni-directional light output is required. This includes gyms, warehouses, assembly facilities and hotel rotundas.

Requirements:

- Rebates apply only to complete, new induction fixtures or retrofit kits, and retrofit kits must have the ballast separate from the lamp.
- New fixtures must not exceed the maximum "Replacement Lamp Wattage" listed in the *Interior Induction Fixtures Rebates* table to the right for each lamp being replaced. New lamp wattage is the total lamp-only wattage.
- Rebates are based on a one-for-one replacement of incandescent or high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium and standard metal halide or pulse-start metal halide. Existing lamp wattage is used rather than total fixture wattage (i.e., a 250-watt, high-pressure sodium fixture equals a 250-watt base case and qualifies under the L1025 rebate code).
- Any wattage incandescent lamp equal to or greater than 60 watts may be replaced by complete, new interior induction fixtures. To calculate the base case wattage for incandescent fixtures with more than one lamp, multiply the number of lamps by the nominal lamp wattage as listed on the lamp label.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp.
- May qualify for an additional control(s) rebate through the "Occupancy Sensors" category, provided all requirements are met.



Exclusions:

- Exterior installations and applications are typically operating during non-peak hours, and therefore do not qualify under this interior fixture category.
- Screw-based retrofit kits do not qualify for this rebate.
- Other fixture configurations may be considered under our Customized Retrofit incentive program.

Interior Induction Fixtures Rebates

Rebate Code	Existing Lamp Wattage	Replacement Lamp Wattage	Rebate/Unit Measure
L0270	400 watt	≤ 250 watt	\$45/fixture
L1025	176–399 watt	≤ 180 watt	\$30/fixture
L1024	101–175 watt	≤ 120 watt	\$25/fixture
L1023	≤ 100 watt	≤ 70 watt	\$12.50/fixture



Exterior Induction Fixtures

Today's modern induction fixtures offer significant improvements over incandescent and high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium, standard metal halide and pulse-start metal halide. Essentially a fluorescent light without electrodes or filaments (the components that frequently cause other bulbs to burn out quickly), induction fixtures provide high energy efficiency, long life, low maintenance costs and high-quality color rendering. They also turn on instantly, work well in low temperatures and can be equipped with dimming controls for additional energy savings.

Ideal use:

With their long life and ability to deliver high-quality light, induction fixtures are suitable for nearly any exterior application, but especially in places where lamp replacement is difficult and expensive. This includes parking lots, gas stations, outdoor parking structures, pathway lighting and outdoor wall-mounted lighting.

Requirements:

- Rebates apply only to complete, new induction fixtures or retrofit kits, and retrofit kits must have the ballast separate from the lamp.
- New fixtures must not exceed the maximum "Replacement Lamp Wattage" listed in the *Exterior Induction Fixtures Rebates* table to the right for each lamp being replaced. New lamp wattage is the total lamp-only wattage.
- Rebates are based on a one-for-one replacement of incandescent or high-intensity discharge (HID) fixtures, including mercury vapor, high-pressure sodium and standard metal halide or pulse-start metal halide. Existing lamp wattage is used rather than total fixture wattage (i.e., a 250-watt, high-pressure sodium fixture is a 250-watt base case and qualifies under the L0267 rebate code).
- Any wattage incandescent lamp 60 watts or greater may be replaced by complete new exterior induction fixtures.
- To calculate the base case wattage for incandescent fixtures with more than one lamp, multiply the number of lamps by the nominal lamp wattage as listed on the lamp label.
- In all cases, the wattage of the replacement fixture must be less than the wattage of the existing lamp.

Exclusions:

- Street and roadway installations do not qualify. Please refer to www.pge.com/led for details about PG&E's LED Street Light Program, or contact your PG&E account representative for more information.
- Pulse-start metal halide fixtures do not qualify for this rebate.
- Screw-based retrofit kits do not qualify for this rebate.

Exterior Induction Fixtures Rebates

Rebate Code	Existing Lamp Wattage	Replacement Lamp Wattage	Rebate/ Unit Measure
L0265	400 watt	≤ 250 watt	\$40/fixture
L0267	201-399 watt	≤ 180 watt	\$25/fixture
L0264	176-200 watt	≤ 120 watt	\$20/fixture
L0263	101-175 watt	≤ 100 watt	\$15/fixture
L0262	≤ 100 watt	≤ 70 watt	\$15/fixture



LAMPS

Low- or Reduced-wattage T8 Lamps

Replacing older, first-generation T8 linear fluorescent lamps with new, low- or reduced-wattage T8 lamps can greatly reduce your energy usage while still maintaining similar lighting levels.

Requirements:

Rebates are available for the installation of 4-foot low-wattage T8 lamps that replace 32-watt T8 lamps. Approved lamps can be found at www.cee1.org on the most recent spreadsheet listed as “28W & 25W Lamps & Ballasts.”

Additional details:

Low-wattage T8 lamps are best used to replace first generation 700 series 32-watt T8 lamps in existing lighting systems. Care should be taken to read manufacturer recommendations for ballast requirements and use in low temperature.

Rebate Code	Existing Lamp Wattage	Replacement Lamp Wattage	Rebate/ Unit Measure
L730	32 watt	28 watt	\$1/lamp
L863	32 watt	25 watt	\$1.50/lamp

Refrigeration

Efficient Evaporator Fan Motors

Retrofitting your refrigeration system’s evaporator fans with electronically-commutated motors (ECMs) can reduce fan energy consumption by up to two-thirds. It is a cost-effective way to reduce energy costs and improve equipment operational efficiency.

Requirements:

- Existing standard efficiency shaded-pole evaporator fan motors must be replaced with Electronically Commutated Motors (ECM) in refrigerated display cases, walk-in coolers and freezers.
- Installation address must have a commercial electric account with PG&E.

Exclusions:

Please note that this rebate cannot be used in conjunction with the *Evaporator Fan Controllers for Walk-in Coolers and Freezers* rebate.

Rebate Code	Description	Rebate/ Unit Measure
R145	Efficient Evaporator Fan Motor ECM Display Case	\$35/motor
R176	Efficient Evaporator Fan Motor ECM Walk-in Cooler/Freezer	\$50/motor

Evaporator Fan Controllers for Walk-in Coolers and Freezers

Installing evaporator fan controllers can yield significant energy savings by enabling fans to run at optimum speed based on the refrigeration system’s compressor cycle. This saves energy by reducing both overall fan usage and the additional refrigeration load that is created by the fan’s wasted heat. Other benefits include longer equipment lifespan and decreased vibration.

Requirements:

- Controller must reduce the airflow of evaporator fans in walk-in coolers and freezers when the compressor cycles off and no refrigerant flows through the evaporator.
- Controller must manage a minimum fan load of 1/20 horsepower when the fan operates continuously at full speed.
- Controller must reduce fan motor power by at least 75 percent during the compressor off cycle.
- Installation address must have a commercial electric account with PG&E.

Exclusions:

Do not install the controller if any of the following conditions apply:

- The compressor runs all the time with high-duty cycle.
- The evaporator fan does not run at full speed all the time.
- The evaporator fan motor runs on poly-phase power.
- The evaporator fan motor is not shaded-pole.
- The evaporator does not use off-cycle or time-off to defrost.

Rebate Code	Description	Rebate/ Unit Measure
R53	Evaporator Fan Controller for Walk-in Coolers and Freezers	\$75/controller



Vending Machine Controllers

Vending machine controllers are “plug and play” devices that use passive infrared sensors to regulate the internal temperature of refrigerated vending machines and occupancy sensors to turn off the machines’ lighting. They offer a quick and easy way to trim ongoing refrigerated cooler costs without affecting enjoyment of a cooler’s refrigerated merchandise.

Requirements:

- Only refrigerated vending machines that contain nonperishable bottled and/or canned beverages qualify.
- Installed controller must include a passive infrared occupancy sensor to turn off fluorescent lights and compressor when surrounding area is unoccupied for 15 minutes or longer.
- Refurbished vending machines that include this technology are eligible for this rebate.
- Installation address must have a commercial electric account with PG&E.

Installation process:

Control logic should periodically power up the machine at two-hour intervals to maintain product temperature.

Rebate Code	Description	Rebate/ Unit Measure
R86	Vending Machine Controller	\$100/controller



Definitions

Annual Fuel Utilization Efficiency (AFUE): Measures the percentage of fuel that is converted into usable heating energy. For example, a 90 percent AFUE furnace means that 90 percent of the fuel is used in heating your facility, while 10 percent escapes as exhaust with the combustion gases.

Btu: British thermal unit, which refers to the amount of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit.

Btu/h: British thermal units per hour.

Candelabra Base: A smaller screw-in base for light bulbs with a 12-millimeter diameter, also referred to as an E12 base.

Climate Zones (CZ): Climate zones are based on energy use, temperature, weather and other factors. They are basically a set of geographic areas that are grouped according to similar climatic characteristics.

CO2 Sensor: Device that measures the parts per million (PPM) of CO2 in the air.

Conditioned Area/Space: Refers to an area being heated or cooled by your heating, ventilation and air conditioning (HVAC) system.

Edison Base: The most common screw-in base for light bulbs with a 26-millimeter diameter, also referred to as a E26 (or medium) base.

Electrical Testing Laboratory (ETL): This organization marks products of compliance to applicable electrical, gas and other safety standards. For more information, visit www.etl.com.

Electronically Commutated Motor (ECM): ECMs are synchronous motors that are powered by a DC electric source using an integrated inverter/switching power supply, producing an AC electric signal which drives the motor.

End-use Customers: Customers who acquire energy for their own consumption.

Energy Factor (EF): The measure of a water heater's efficiency. EF is based on recovery efficiency, standby losses and cycling losses. The higher the EF, the more efficient the water heater.

Fixture: Generally, a light fixture is an electrical device used to create artificial light by use of an electric lamp. All light fixtures have a fixture body and a socket to hold the lamp and allow for its replacement. For PG&E lighting rebates, a fixture refers to new equipment being installed based on system wattage (lamp and ballast).

Indoor Tank: Tank located in an enclosed indoor space, where it is not exposed to sun or wind.

K-value: This refers to thermal conductivity and has a unit of Btu-inch per hour, per square foot, per degree Fahrenheit.

Light-emitting Diode (LED): An LED lamp is a light-emitting diode product that is assembled into a lamp (or light bulb) for use in lighting fixtures. LED lamps have a lifespan and electrical efficiency that is several times better than incandescent lamps, and significantly better than most fluorescent lamps, with some chips able to emit more than 100 lumens per watt.

Low Temperature: For freezers, refrigerated space temperatures are considered "low" if they are below 32 degrees Fahrenheit.

MBtu: 1,000 British thermal units.

MBtu/h: 1,000 British thermal units per hour.

Medium Temperature: For coolers, refrigerated space temperatures are considered "medium" if they are between 32 to 50 degrees Fahrenheit.



Minimum Energy Efficiency Ratio (EER): EER is the efficiency of the unit; it measures the number of cooling capacity in BTU per watt hour. The higher the EER rating, the higher the efficiency of the unit.

NEMA Premium Ballasts: These are the most efficient fluorescent fixed output and dimmable electronics for T8 ballasts to be recognized by the National Electrical Manufacturers Association (NEMA).

NEMA Premium Motor: An alternative current induction motor that has a certified efficiency rating from the National Electrical Manufacturers Association.

Permanent Mag Motor: A permanent magnet AC motor.

Pressure per Square Inch (PSIG): Refers to the pounds of steam pressure per square inch, as shown on a gauge. The steam system should have a steam pressure gauge attached which reads the pressure of the steam in the pipes. The pressure gauge will read out in pounds of pressure per square inch (PSIG).

R-value: Insulation is rated in terms of thermal resistance, called R-value, which indicates the resistance to heat flow. A greater R-value corresponds with a greater insulating effectiveness.

Shaded-pole Motor: This type of motor is the original form of an AC single-phase induction motor.

Ton: A ton is the unit of measurement that is the cooling capacity of the system and is 12,000 Btu per hour.

Underwriters Laboratory (UL): An independent product safety certification organization. For more information, visit www.ul.com.

Variable Frequency Drive (VFD): An electric motor changes the motor's rotations per minute by either manual setting or variable input from one or more sensors.



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The success of your business increasingly depends on both energy reliability and the reduction of controllable energy costs. Our team of agricultural and food processing experts is here to help you take advantage of all the tools and resources—offered by our own programs as well as others—that can help you use energy more efficiently, save money and reduce your impact on the environment in the process.

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