

➤ Heating Efficiency

A. Description

Public Service's Heating Efficiency product provides rebates for business customers who purchase high-efficiency natural gas, electric, or dual-fuel commercial equipment for space heating, water heating or process heating loads less than 30 percent. Available rebates are designed to promote the installation of high-efficiency equipment that improves combustion and seasonal efficiency above standard levels for both natural gas and electricity. While this product is only available for Public Service's retail natural gas and electric business customers, those who choose to switch from a third-party natural gas provider can also be eligible for natural gas measures. This product is not available for *Gas Transport Only* customers. The product has several components which include: hot water boiler systems, water heaters, boiler auxiliary equipment improvements, pipe insulation, unit heaters and other unique (custom) heating systems. ~~The product's electric component provides a rebate for Electronically Commutated Fan Motors (ECMs) for commercial furnaces. The Company is also adding two new measures, Ozone Laundry and direct installations of pipe insulation. These measures will allow for natural gas savings while offering low costs of installation. The details for each product measure are described below.~~

1. Hot Water Boiler Systems

Public Service rebates hot water boilers that exceed the minimum efficiency levels established by 2015 International Energy Conservation Code (IECC) standards. IECC requires a minimum efficiency of 82% on 2,500 MBTU/h or larger units and requires a minimum efficiency of 80% on hot water boilers less than 2,500 MBTU/h. Rebates are eligible for the installation of a new boiler where no previous boiler existed, the current boiler is no longer operational, or an upgrade is being made.

2. Water Heater Systems

Commercial water heating systems that exceed the minimum efficiency levels established by the 2015 IECC standards are eligible for a rebate. These can be either tankless or storage systems, and must be greater than or equal to 75,000 BTU/h and more than 92% efficiency.

3. Boiler Auxiliary Equipment Improvements

The performance of a boiler system can be enhanced with controls and system efficiency improvements. Boiler auxiliary equipment rebates are based on the incremental cost of efficient equipment and are calculated based on a percentage of the incremental project cost (i.e. how much it costs to perform that portion of the project, not the entire project cost). The following will be rebated:

a) Boiler Efficiency Retrofits

- Modular burner controls (addition of controls to existing equipment) with 5:1 turndown ratio or greater;
- Outdoor air reset controls;

- Stack dampers; and
- Steam trap replacement/parts.

b) *Pipe Insulation*

- Insulation rebates are for boiler or water heater pipes and are based on the pipe's diameter and the linear feet of insulation; and
- Direct Installation of Pipe Insulation by a third-party vendor is available.

4. Unit Heaters

Electricity savings for the non-condensing power vent unit heaters ~~and condensing unit heaters~~ are for the fan that is associated with a unit heater; infrared unit heaters do not have a fan.

Rebates are for customers who install:

- A non-condensing power vent unit heater with a minimum efficiency of 83%;
- ~~A condensing unit heater with a minimum efficiency of 90%; or~~
- Infrared heater with a minimum efficiency of 80%.

5. Ozone Laundry

Ozone laundry is a midstream offering. It is an add-on retrofit generator for improving the energy and water efficiency of multi-load washers. To be eligible, ozone laundry systems must transfer ozone into the water through Venturi Injection or bubble diffusion. Ozone laundry equipment works most effectively in cold water, significantly reducing or eliminating the need to heat water.

6. Custom Heating

Equipment installations performed outside of the prescriptive scope may be eligible for rebates available through the Custom Heating Efficiency product. All projects require preapproval prior to purchase and installation and must conform to all Custom Heating Efficiency product guidelines. ~~More Custom Efficiency rebates and guideline information can be found on the Company's website.~~[‡]

These projects require individual evaluation to determine how much energy will be saved and to ensure cost-effectiveness. Projects that typically fall under the custom category include, but are not limited to:

- Large boiler systems (greater than 10 million BTU/h);
- Carwash boilers;
- Pool boilers;
- Boiler control systems; and
- Process load over 30%.

[‡]http://www.xcelenergy.com/Energy_Solutions/Business_Solutions

Targets, Participants & Budgets

Targets and Participants

Project pipeline and market potential were evaluated to determine participation and energy savings targets. Participation increased rapidly through the first few years of the product's natural gas energy efficiency offerings, but due to low natural gas prices, pipeline momentum has slowed in recent years. To increase participation in the product, the Company will review potential new prescriptive measures identified through Custom Efficiency, as technology improves and markets change. The Company will also explore different product delivery models to increase the cost effectiveness of the program. Midstream ozone laundry and direct installation of pipe insulation measures will be used to test effectiveness of different delivery models.

Budgets

For the Heating Efficiency product, rebates are the largest expense, with promotional costs and labor also being factors. The following summarizes the budget drivers:

- *Rebates* – calculated using average rebate cost per Dth, kW, and kWh.
- *Promotions* – important to build awareness and provide education on the benefits of high-efficiency heating systems.
- *Labor* – determined by estimating the number of full-time employees needed to manage the product and execute the marketing strategy and rebate process.

B. Application Process

Rebate applications are available on the Xcel Energy website.² Hard copies are also available via Account Managers, the Trade Relations Manager, and trade allies. Participants in the product may submit their application through their Account Manager or the Business Solutions Center (BSC). Customers must apply for rebates within 182 months of equipment purchase and start-up. Participants are required to complete an application, provide manufacturer equipment specifications and an invoice, as proof of purchase.

The following equipment information must be included on the application when applying for a boiler rebate:

- use (space heat and/or domestic water heat or both);
- manufacturer;
- model number;
- boiler size (in million BTU/h);
- full-load efficiency;
- process load percentage; and
- quantity.

² http://www.xcelenergy.com/Energy_Solutions/Business_Solutions

Information required for other equipment may include:

- fluid temperature;
- pipe location (inside/outside) linear feet;
- pipe diameter;
- project cost; and
- serial number.

Preapproval is not required before the customer buys or installs equipment for prescriptive measures, but will be required for custom projects in accordance with the Custom [Heating](#) Efficiency product policies.

C. Marketing Objectives & Strategies

The objective of the Heating Efficiency product is to provide education and incentives that motivate customers to purchase high-efficient heating equipment and run their existing heating systems at optimum efficiency. Boiler systems are typically installed in mid- to large-sized facilities. The product marketing strategy supports identification of and targeted messaging to the different facilities for efficiency improvement.

The Heating Efficiency product follows the marketing strategy of other prescriptive products, leveraging the BSC to improve the level of knowledge on heating efficiency in the marketplace. The Company also provides a newsletter and direct-communication campaigns to customers and trade allies, and participates in trade shows and other events. These tactics make customers aware of the key benefits of energy efficiency and its applicability to heating systems. The Company provides fact sheets and rebate applications to customers directly, and via trade allies, to encourage them to consider leveraging Heating Efficiency rebates as they make equipment purchase decisions. An online case study helps customers, identifying the energy and non-energy benefits of upgrading to high-efficiency and auxiliary equipment. In addition, Public Service's Account Managers and BSC will educate customers on the project's energy savings potential, impact of the rebate on the payback calculation, and how to complete the application process. Trade allies can get similar assistance from the Company's Trade Relations Manager.

The Heating Efficiency product may also follow-up on customer opportunities identified following participation in the Business Energy Analysis product—communications will center on the benefits of energy efficiency through reduced paybacks and lifecycle costs, and greater environmental benefits.

D. Product-Specific Policies

Gas Transport Only customers cannot participate in rebates for the Heating Efficiency product. Participating customers must be a business retail natural gas customer of Public

Service and must be an electric only or a combination electric and gas customer to qualify for the electric ~~ECM~~ rebates.

E. Stakeholder Involvement

Public Service routinely consults with several of the major equipment suppliers and contractors for guidance when refining the Heating Efficiency product for Colorado.

These stakeholders provided insight into the types of products to rebate, the incremental and total equipment costs to be expected, and how the application process can be improved. The Company also works closely with state and local governments to promote energy efficiency and holds semi-annual Heating Advisory Board meetings to engage with contractors and seek feedback and input on product updates and other considerations in delivering this product.

F. Rebates & Incentives

<u>Equipment</u>		<u>Rebate</u>
Hot Water Boiler	85% minimum efficiency	\$14700 per million BTU/h*
	92% minimum efficiency	\$3,000 per million BTU/h*
Water Heater	Tankless or with storage	\$400 per 100,000 BTU/h*
Pipe Insulation		\$5 - \$9 per linear foot
Electronically Commuted Motor (ECM)		\$100 per motor
Non-Condensing Unit Heater	83% minimum efficiency	\$50 per 100,000 BTU/h*
Condensing Unit Heater	90% minimum efficiency	\$150 per 100,000 BTU/h*
Infrared Heater	90% minimum efficiency	\$250 per 100,000 BTU/h*

* MMBTU/h is based on boiler input capacity. 1 MMBTU/h equals 1 million BTU per hour. Boilers smaller than 1 MMBTU/h still qualify for rebates.

Improvements and Add-ons

The improvements and add-ons in the table below are only eligible for a rebate if a breakout of the equipment costs is clearly indicated on the invoice.

<u>Equipment</u>	<u>Rebate</u>
Modular burner controls >5:1 turndown ratio	\$750 per million BTU/h*; \$2,000 maximum
Outdoor air reset controls	\$250 per million BTU/h*
Stack dampers	\$250 per million BTU/h*
Steam trap replacements	25% of trap cost up to \$250 per trap maximum
Custom Electric	Up to \$500 peak kW saved + \$100 off peak saved

Custom Gas

\$4 per Decatherm

* MMBTU/h is based on boiler input capacity. 1 MMBTU/h equals 1 million BTU per hour.
Boilers smaller than 1 MMBTU/h can qualify for rebates.