

## Residential Heating & Cooling

### A. Description

The Residential Heating & Cooling product provides incentives to the Company's customers who purchase a variety of qualifying heating and cooling equipment for residential use, including air conditioners, evaporative coolers, heat pumps, natural gas furnaces, natural gas boilers, natural gas water heaters, electric heat pump water heaters, smart thermostats, and the Western Cooling Control device.

The Residential Heating & Cooling product combines offerings from several existing products – Evaporative Cooling, High Efficiency Air Conditioning, Residential Heating, Thermostat Optimization, and Water Heating. This new, holistic approach to residential customers' heating and cooling needs is designed to improve the experience for customers and trade partners, in order to improve participation, energy savings, and customer satisfaction.

The Company is looking into ways to provide a more comprehensive experience for our residential customers that simplifies the process of installing capital intensive energy efficient equipment. This may include an end-to-end solution where the customer chooses from any, or all, of the following as applicable:

- Advice and analysis of the available equipment options
- Financing
- Enrollment in Demand Management products
- Assistance with choosing qualified contractors
- Enrollment in green programs and/or warranty services.

As part of our strategy to increase participation in demand response products, this product will be offering AC Rewards. Further details are provided in the technical assumptions.

More details regarding the specific types of equipment rebated in this product are provided below:

- **Standard AC or ASHP systems with Quality Installation (“QI”)** - 13 to 14.99 Seasonal Energy Efficiency Ratio (“SEER”) – Defined as new central Air Conditioning (“AC”) or Air Source Heat Pump (“ASHP”) systems with “matched” indoor and outdoor components, in new or existing homes. Approximately 75 – 80% of new AC systems purchased are in this efficiency range.

According to energy.gov, approximately 27% of the rated efficiency of a new system can be achieved through Quality QI. QI is a process, based on standards developed by the Air Conditioning Contractors of America (“ACCA”) which contractors must follow to ensure that the total energy savings potential of newly installed equipment is realized. QI includes sealing all visible ducts, providing at least 400 cubic feet per minute (“CFM”) of air flow per cooling ton, applying ACCA's Manual J (load calculation) and Manual S (equipment sizing) standards to determine the right size and type of equipment for each customer's unique home, and charging the new system with refrigerant to within 3

degrees of the manufacturer's recommended sub-cool target temperature. Only participating trade partners who have a technician with Company approve certifications and/or licenses can offer this rebate.

- **High Efficiency AC or ASHP systems with Quality Installation** – Defined as new central Air Conditioning and Air Source Heat Pump systems with “matched” indoor and outdoor components, and with thermostatic expansion valves, in new or existing homes, that meet certain energy efficiency standards as outlined in Section G below, are eligible for a rebate. The intent of the rebate is to encourage consumers to purchase units that meet or exceed the ENERGY STAR® high efficiency standard of at least 15 SEER and 12.5 Energy Efficiency Ratio (“EER”). Trade partners who have met the AC or ASHP participation requirements can offer this rebate. To be eligible for a cold climate heat pump rebate, units must have an 18 SEER, 10.5 HSPF, and the heating BTU at 5 degrees Fahrenheit must be at least 70% of the heating BTU at 47 degrees Fahrenheit.
- **Evaporative Coolers** - Qualifying equipment must be new, permanently installed evaporative cooling units. Portable coolers or systems with vapor compression backup are not eligible, neither is used or reconditioned equipment.
- **Mini-Split Heat Pumps (“MSHP”)** – The mini-split heat pump equipment serves residential customers who either cannot install traditional split, central air conditioning systems, or have hard-to-heat/cool areas of their homes, or who simply prefer this technology. To be eligible to participate, residential electric customers must purchase and install a unit that has a rated efficiency of 15 SEER, 11 EER, and 9 Heating Seasonal Performance Factor (“HSPF”). Variable-speed systems which meet these requirements are eligible for a rebate. The unit must be used for cooling and heating purposes. There is not a QI component, and certification is not a requirement. Any trade partner can offer this rebate. To be eligible for a cold climate heat pump rebate, units must have an 18 SEER, 10.5 HSPF, and the heating BTU at 5 degrees Fahrenheit must be at least 70% of the heating BTU at 47 degrees Fahrenheit.
- **Ground Source Heat Pump with Quality Installation (“GSHP”)** – The Ground Source Heat Pump equipment measure serves a small market niche of consumers who seek out the most highly efficient technology. To be eligible to participate, residential electric customers must purchase and install a unit that is ENERGY STAR® certified. The ENERGY STAR® certified GSHP performance criteria are a minimum of 3.3 Coefficient of Performance (“COP”) and 14.1 EER. Equipment must be AHRI performance-certified at standard rating conditions. Rebates will be given for GSHPs that are installed as closed loop systems and are used for both heating and cooling. Trade partners who are registered participating contractors for the AC rebates may offer this rebate.

- **Natural Gas Furnaces** – Furnace rebates are offered for a minimum furnace efficiency of 95% Annual Fuel Utilization Efficiency (“AFUE”). Equipment must be AHRI performance-certified at standard rating conditions.
- **Natural Gas Boilers** – Boiler rebates are offered for a minimum boiler efficiency of 95% Annual Fuel Utilization Efficiency (“AFUE”). Equipment must be AHRI performance-certified at standard rating conditions. Higher rebates are available for boilers with a sidearm water heater.
- **Water Heaters** - The product is applicable only for the purchase of qualifying new natural gas standard storage tank water heaters, natural gas tankless water heaters or electric heat pump water heaters installed in new or replacement applications. Qualification for an incentive is a minimum efficiency of 0.64 Uniform Energy Factor (“UEF”) for medium draw standard tanks, 0.68 UEF high draw standard tanks, 0.87 UEF tankless natural gas water heaters. ENERGY STAR® electric heat pump water heaters also qualify for an incentive. In recognition of future demand response opportunities, heat pump water heaters that are CEA/ANSI enabled will receive a higher incentive. For natural gas water heaters, customers may choose their own independent residential water heating contractor or installer or install the unit themselves. Electric heat pump water heaters must be installed by a registered contractor.
- **Smart Thermostat** - The concept of realizing energy savings by programming a thermostat is straight-forward: scheduling temperature setting changes (setbacks) during times when home occupants are away or asleep ensures no energy is wasted when no one is home or awake. Thermostats meeting the ENERGY STAR® Connected Thermostat specification have demonstrated the ability to achieve energy savings through HVAC equipment runtime reductions, specifically an 8% or higher reduction in heating equipment runtime and a 10% or higher reduction for cooling equipment runtime.

These runtime reductions are achieved by smart thermostats through a variety of methods, starting with the ease of scheduling. These devices make it easier to program efficient setback schedules compared to their non-communicating predecessors.

In addition to ongoing product innovations by thermostat manufacturers, software firms have begun to provide additional optimization functionality that promises to proactively manage customer thermostats for deeper energy efficiency and demand management functionality without negatively impacting customer comfort.

- **Western Cooling Control** – The Western Cooling Control (“WCC”) device effectively increases the capacity of a central AC or ASHP unit by capturing cooling energy left in the refrigerant within, as well as the water condensed on, the cooling coil after a cooling cycle has completed. Many newer cooling units have built-in features that provide similar benefits to the WCC device; therefore, this measure is available only to customers with units installed in 2009 or prior. There is not a QI component to this measure; NATE certification is not a requirement. Any trade partner can offer this rebate.

## **B. Targets, Participants & Budgets**

### Targets and Participants

Participation and energy savings levels for this product are based on 2018-2019 participation, as well as increased marketing efforts to the most cost-effective equipment within the product and working through trade partners and stakeholders to engage customer participation.

### Budgets

The budget forecast is based upon forecasted participation, and the majority of the budget is for direct customer incentives. For some equipment, contractors and/or retailers are also paid an incentive, to further encourage their support of these products. The budget also includes costs for verifying a percentage of the new equipment installations in the field to ensure they meet expected energy savings, including (where applicable) ACCA standards for quality installation; for advertising and marketing; and for other administrative expenses including labor and contractor training.

## **C. Application Process**

The typical sales cycle begins with a customer hiring a contractor, learning about energy efficient models, and purchasing and installing the unit. Following installation, the customer or trade partner submits a completed Company rebate application and equipment invoice. Invoices must reflect the same information provided on the application form, specifically the model number, serial number, installation address, and purchase date. Other information gathered on the application form includes the customer’s account number, mailing address if different from installation address, customer signature, trade partner signature and information related to the equipment such as efficiency ratings, heating and cooling capacity, and size.

The Company is pursuing a more comprehensive rebate application form to minimize paperwork

for the customer and trade partners while still collecting all of the information needed to thoroughly review and process the applications as quickly as possible. The Company's online application tool will remain available and will comply with these requirements. The Company may also offer "instant rebates" for certain types of equipment through various retail and wholesale distribution partners, including (but not limited to) an online, Company-branded marketplace.

All information requested on the rebate applications must be provided for the rebate process to be completed. Information needed on the invoice is specified on the back of each rebate application form; this information must be provided in order for the rebate process to be completed.

Equipment eligibility is determined by using the AHRI Directory of Certified Product Performance, the list of ENERGY STAR® Qualified Products on the ENERGY STAR® website, or on the list of qualified model numbers maintained by the Company and available on the Company's web site, as specified on the rebate application for the particular type of equipment. Rebates are typically mailed within eight weeks.

The Company reviews each rebate application and verifies that all the required data has been provided and that all product requirements have been met. When corrections are needed to rebate applications, the Company sends a request to the contractor. Applications may be resubmitted. Customers applying for instant rebates enter information that is verified through a third-party vendor partner's software, which validates the customer's premise, type of service, and eligibility before the instant rebate coupon is generated.

## **D. Marketing Objectives & Strategies**

The Residential Heating & Cooling product seeks to increase awareness and the demand for a variety of heating and cooling products within the Company's service area, help customers and participating contractors offset costs associated with high efficiency equipment and quality installation practices, reduce customers' energy costs, meet customers' environmental goals (such as reducing carbon emissions), and increase their comfort. To support these goals, the Company plans to implement the following marketing strategies to increase product awareness:

- Use of the HVAC contractor community as the primary marketing channel. The Company's Channel Manager is responsible for conducting trade partner training, meetings, telephone calls, emails, and sending newsletters to keep the trade informed and engaged in the product. In addition, a qualified contractor list is available on the Company's website and participating contractors are expected to assist in promoting the product. The Company provides brochures for contractors to distribute to customers as well.
- Company marketing and advertising strategies will be used to create customer awareness. This may include, but is not limited to, e-mail, bill inserts, direct mail, bundled marketing campaigns, community newsletters, webinars, promotional booths at public events, radio and/or television advertising, sponsorships.

- The Company's website also includes information regarding the product and is updated as needed to more effectively reach customers. This includes information on product details, quality installation practices, and where to find qualified contractors. The site also hosts webpages designed specifically for contractors to obtain information about the product.
- When appropriate for a particular type of equipment, the Company will provide Point of Purchase displays at big box stores and appliance retailers.

## **E. Product-Specific Policies**

Contractors who do not comply with the product requirements and guidelines are not allowed to participate in the product. Requirements may include taking and passing Company-provided training classes, for the purpose of increasing the energy savings and/or increasing customer satisfaction with the rebate process.

These rebates are available to residential Xcel Energy account holders, with electric or natural gas service (depending on the type of equipment) provided by Xcel Energy. All equipment must be new and permanently installed. Used or reconditioned equipment is not eligible for a rebate.

For the following types of equipment, customers must have residential electric service with Xcel Energy: AC, ASHP, Electric Heat Pump Water Heaters [replacing electric resistance water heater](#), Evaporative Coolers, MSHP, GSHP, and WCC.

For the following types of equipment, customers must have residential natural gas service with Xcel Energy: Natural Gas Furnaces, [Natural Gas Boilers](#), Natural Gas Water Heaters.

[For participants who are replacing natural gas water heating equipment with a heat pump water heater, the customer must have residential electric and natural gas service with Xcel Energy.](#)

To be eligible for the Smart Thermostat offering, participants must be a residential customer of the Company. For customers with electric service, participants must have central air conditioning; for gas-only customers, participants must have central gas heating. Customers with electric and gas service must have central air conditioning and/or central gas heating.

Additional qualifications for particular types of equipment are as follows:

To be eligible for Standard AC or ASHP equipment with QI or High-efficiency AC/ASHP equipment with QI rebates:

- The customer must use a registered contractor with a NATE-certified technician for the installation of the new system and who annually pass required online classes. These contractors have agreed to the terms of the product and meet the requirements related to quality installation practices. A list of registered contractors can be found on the Xcel Energy website.
- The technician's NATE certification can be used by one contractor company only, for the purpose of qualifying the company to offer these rebates. If the technician's NATE

certification is in ASHP, the technician's company meets the AC NATE certification requirement automatically.

- The “matched system” must be listed in AHRI’s Residential Directory. This directory is used to identify product classification, determine efficiency ratings, and confirm matched systems.
- In order to verify that the equipment has been properly installed, the equipment must be installed and tested as specified in the Xcel Energy QI guidelines based on ACCA standards. The equipment installation and testing for QI must be completed before the rebate application is submitted for processing by the Company.
- The use of a furnace’s variable speed fan to increase the SEER rating above the nominal rating is allowed for determining rebate eligibility, provided that the overall furnace and air conditioning combination rating can be found in the AHRI’s Residential Directory ([www.ahridirectory.org](http://www.ahridirectory.org)). The furnace does not have to be new, in order to use it for an increased efficiency rating. The homeowner or contractor must supply the furnace model number and serial number on the application and invoice.

To be eligible for a Mini-Split Heat Pump rebate, the unit must be used for cooling and heating purposes; therefore, mini-split air conditioners (cooling only units) do not qualify. The AHRI certificate must be in the residential category of “Variable-speed Mini-Split and Multi-Split Heat Pumps.” Multiple head mini-split systems qualify.

To be eligible for the WCC device rebate, the existing furnace must have been installed in 2009 or prior.

To be eligible for an evaporative cooler rebate, qualifying equipment must be a permanently installed direct, indirect, or two-stage evaporative cooling unit. Customers can replace an existing evaporative cooler or central AC system, or purchase a first-time installed evaporative cooling unit, to qualify for a rebate.

There are three equipment tiers available for evaporative coolers:

- Standard Evaporative Coolers: Qualifying evaporative cooling units with airflow output of 2,500 CFM or greater.
- Premium Evaporative Coolers: Qualifying evaporative cooling units with media saturation effectiveness of 85% or greater. The units must be manufactured with remote thermostat control and periodic purge water control (e.g. purge pump) or have these two items purchased and included on an invoice.
- Multi-Ducted Evaporative Coolers: In addition to 85% saturation effectiveness, remote thermostat control and periodic purge water control, qualifying evaporative cooling units must be indirect/directly cooling the whole house with a minimum of three supply ducts installed, and at least one of the supply ducts must be newly installed along with the new cooler.

To be eligible for a natural gas storage water heater rebate, the storage tank must be no larger than 55 gallons.

To be eligible for a 95% AFUE natural gas furnace rebate, an AHRI certificate must be available.

To be eligible for a 95% AFUE natural gas boiler rebate, an AHRI certificate must be available.

To be eligible for a heat pump water heater rebate, the customer must use a registered contractor for the installation of the new system. These contractors have agreed to the terms of the product.

A list of registered contractors can be found on the Xcel Energy website. To be eligible for the higher rebate for a “grid-enabled” water heater, the customer must purchase and install a water heater eligible to participate in the Company’s demand management products for water heaters.

The Company maintains a list of eligible model numbers, which is available on the Company’s web site.

To be eligible for a smart thermostat rebate, the customer must install a thermostat which meets the ENERGY STAR® Connected Thermostat standard and which is eligible to participate in the Company’s demand management products for smart thermostats, AC Rewards. The Company maintains a list of eligible model numbers, which is available on the Company’s web site.

## **F. Stakeholder Involvement**

The Company considers its stakeholders for the Residential Heating and Cooling product to be contractors, distributors, manufacturers, retailers, SWEEP, EEBC, CEO, local municipalities within the service area, and other environmental organizations. Stakeholders are able to share their product suggestions during the Company’s quarterly DSM Roundtable Meetings. In addition, the Company is a member of the CEE, and monitors its initiatives related to residential heating and cooling equipment.

## **G. Rebates & Incentives**

Rebates are payable to residential account holders with electric or natural gas service (depending on the type of equipment), or to an alternate rebate recipient of their choosing. All types of equipment must meet all requirements to receive the rebate. For rebates which are based upon multiple measures of efficiency, the rebate is paid according to the lesser value of the technical requirements of the various measures, including SEER, EER, HSPF, and COP. The rebate amount shall not exceed the purchase price.

For certain types of equipment, the Company will also pay incentives associated with customer rebates to participating, registered contractors or retailers in good standing.

Homeowners may receive the equipment rebate directly or may provide written permission for the rebate to be paid directly to the contractor or to another designated alternate rebate recipient. Builders, as the original purchaser of equipment, are eligible to receive an equipment rebate; however, the rebate will only be issued once so builders should coordinate with the homeowners as to who will receive the rebate. Contractor incentives are paid to the contractor company at the

same time that the associated rebate is paid to the account holder or alternate rebate recipient. Retailer incentives are paid on a quarterly basis.

Customers, contractors, or retailers who receive an incentive through another DSM product (e.g., [Home Performance with ENERGY STAR® Whole Home Efficiency](#) or ENERGY STAR® New Homes) for the same equipment are not eligible to receive a rebate through this product. By accepting a rebate, the customer agrees to reasonably accommodate M&V consultants.