High Efficiency Air Conditioning

A. Description

The High Efficiency Air Conditioning (HEAC) product comprehensively addresses energy efficiency opportunities related to central air conditioners, air source heat pumps, ductless mini-split heat pumps and ground source heat pumps. The HEAC product is comprised of six measures, each meeting a different need in the cooling marketplace.

- **Plan A New Equipment Rebates** – Central air conditioners and air source heat pumps (ASHPs) that meet certain energy efficiency standards, as outlined in Section G below, are eligible for a rebate. The goal of the rebate is to encourage consumers to purchase units that meet or exceed the ENERGY STAR efficiency standard of 15.0 SEER. Equipment must be Air Conditioning and Refrigeration Institute (AHRI) performance-certified at standard rating conditions.

- **Quality Installation** – All Plan A New Equipment rebates must also include a Quality Installation (QI). The QI process is based on standards developed by the Air Conditioning Contractors of America (ACCA) which dictate the steps a contractor must take to ensure a true quality installation. This QI measure, which starts with a load calculation to determine the proper size of equipment to be installed, helps ensure that the total energy savings potential of newly installed equipment is realized.

- **Plan B Trade-In Rebates** – This measure is intended to motivate homeowners to replace older, lower efficiency residential central air conditioning or air source heat pump units that are still operable. These units may be working well now or may new some capital dollars for repair. Customers will be required to replace them with high efficiency units (14.5 SEER or higher) before the end of the unit’s useful life. This measure is expected to bring in new incremental participation that would not have been realized otherwise.

- **Ductless Mini-Split Heat Pumps** – The ductless mini-split heat pump equipment serves a small market niche of consumers who cannot install ducted systems, have a hot or cold room or have already decided a mini-split is the best solution. To be eligible to participate, residential electric customers must purchase and install a unit that is 15.0 SEER and 9 HSPF (Heating Seasonal Performance Factor) or higher. The unit must be used for cooling and heating purposes. Equipment must be AHRI performance-certified at standard rating conditions.

- **Ground Source Heat Pumps** – The Ground Source Heat Pump (GSHP) 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 COP and 14.1 EER. Rebates will be given for GSHPs that are installed as closed-loop systems and are used for both heating and cooling. The rebates are only available for electrically-heated homes where natural gas is not in use. This measure will require a similar QI standard as required for Plan A.
- **Western Cooling Control** – The Western Cooling Control (WCC) device effectively increases the capacity of a central air conditioner 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. Due to the fact that many newer cooling units have built-in features that provide similar benefits to the WCC device, this measure is available only to customers with units installed in 2009 or prior.

Participating contractors installing central air conditioners, ASHPs or ductless mini-split heat pumps must have a technician on staff that holds current North American Technical Excellence (NATE) certification in air conditioning or air to air heat pump installation.

Participating contractors installing GSHPs must have a technician on staff that holds current NATE-certification in GSHP loop installation or accreditation through the International Ground Source Heat Pump Association (IGSHPA).

**B. Targets, Participants & Budgets**

**Targets and Participants**
Participation and energy savings levels for this product are based primarily on past product performance in the Colorado marketplace. Approximately 70% of all participants are projected to qualify through Plan B. The HEAC product’s tiered SEER levels are designed to move customers beyond the 14.5 SEER level.

**Budgets**
The 2017 and 2018 budgets were established primarily based on the cost per participant. The high efficiency equipment rebate begins at a minimum of 15.0 SEER for Plan A and 14.5 SEER for Plan B. Contractors are paid a QI incentive at all SEER levels, further encouraging their support of the product and a financial interest to continue quality installation practices. The budget also includes costs for verifying a percentage of the new equipment installations in the field to ensure they meet ACCA quality installation standards and expected energy savings.

**C. Application Process**
The application process requires that the customer use a registered contractor with a NATE-certified technician. 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.1

The customer must select a new central air conditioning or air source heat pump system with an overall efficiency of 15.0 SEER or higher for a Plan A New Equipment rebate

1 www.xcelenergy.com/cotrades
and 14.5 SEER or higher for a Plan B Trade-In Equipment rebate. All new equipment installed for this product **must** meet QI standards to receive an equipment rebate. The system must meet the following requirements to be eligible:

- The equipment, components and/or system must be listed in AHRI’s Residential Directory. This directory is used to identify product classification, determine efficiency ratings, and confirm matched systems.
- Multi-stage air conditioning units are eligible for rebates if an earlier matching furnace was installed and is part of the high efficiency air conditioning system per AHRI Residential Directory listings. The homeowner or contractor must supply the furnace model number and serial number on the application and invoice.
- For single-stage systems, the use of a furnace’s variable speed fan to increase the SEER rating above the nominal rating will be allowed for determining rebate eligibility, provided that the overall furnace and air conditioning rating can be found in the AHRI’s Residential Directory. The homeowner or contractor must supply the furnace model number and serial number on the application and invoice.

In order to verify that the equipment has been properly installed, the contractor must bring the system to a steady state and perform QI tests – as specified in the Xcel Energy QI guidelines based on ACCA standards. There is no separate application process for the contractor QI incentive; there is a section within the customer application to indicate the quality installation process is being followed. Testing can only occur when the outside temperature is 67 degrees or higher, or 60 degrees or higher if the Field Diagnostic Services, Inc. (FDSi) diagnostic tool is used.

The Company requires that a dated sales receipt/invoice with the following information accompany the rebate application:

- Purchase date
- Equipment manufacturer
- Condenser model and serial numbers
- Evaporator coil model and serial numbers
- Furnace model and serial numbers (if installed simultaneously with a new system or to increase the SEER rating per AHRI listings)
- Size or Capacity
- Efficiency levels
- Customer name and installation address

Additionally, for the Trade-In Equipment measure, the following retired (existing) unit information must accompany the rebate application:

- Make, model and serial number of the condenser
- Unit SEER and/or EER rating as given by the manufacturer

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2 [https://www.ahridirectory.org/ahridirectory/pages/home/aspx](https://www.ahridirectory.org/ahridirectory/pages/home/aspx)

The equipment installation and testing for QI must be completed before the rebate application is submitted for processing by the Company. All information on the receipt/invoice must match the information on the rebate application exactly. In addition, the application form will require the name and signature of the NATE-certified technician indicating that the NATE-certified technician has reviewed the new equipment installation on the application. An AHRI certificate, printed in the same year as the installation, must accompany the rebate and invoice for approval.

Ductless Mini-Split Heat Pump installations require a separate rebate application. The Company requires that a dated receipt/invoice with the following information accompany the rebate application:

- Purchase date
- Equipment manufacturer
- Condenser model and serial numbers
- Evaporator model and serial numbers
- Size or capacity
- Efficiency levels
- Customer name and installation address

All information on the receipt/invoice must match the information on the rebate application exactly. An AHRI certificate, printed in the same year as the installation, must accompany the rebate and invoice for approval.

WCC installations require a separate rebate application. The Company requires that a dated receipt/invoice with the following information accompany the rebate application:

- Purchase date
- Age of the existing unit
- SEER rating of the existing unit
- Cooling capacity (in tons) of the existing unit
- Customer name and installation address

D. Marketing Objectives & Strategies

The HEAC product seeks to increase demand for and availability of high efficiency cooling equipment, and to increase awareness and penetration of the QI process within the Company’s service area. The ultimate goal is to increase energy savings for the customer. To support this goal, 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, letters and newsletters with regular frequency to keep the trade informed and engaged in the product. In addition, a qualified contractors 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 bill onserts and newsletters will be used to create customer awareness.
- The Company’s website also includes information regarding the product and is updated as needed to more effectively reach customers. This includes information on proper equipment sizing and airflow, product details and where to find qualified contractors. The site also hosts webpages designed specifically for HVAC trade partners to obtain information about the product.

E. Product-Specific Policies

In order to qualify for a Plan A New Equipment rebate, customers must purchase a qualifying unit. High efficiency equipment rebates will not be paid without QI from an approved contractor. Contractors must have a NATE-certified technician on staff, attend all required trainings conducted by the Company, follow all program guidelines, and be approved by the Company. Contractors who do not comply with the product requirements and guidelines are not allowed to participate in the product, including suspensions during the calendar year.

In order to be eligible for the Plan B Trade-In Equipment rebate, the retired (existing) unit must have a SEER of 12.0 or lower. This will be determined by the contractor at the time of removal from the customer’s premise. The retired unit information will be included in the rebate application. If the SEER or EER cannot be determined by the contractor, the unit will not be eligible for the rebate.

In order to be eligible for a Ductless Mini-Split Heat Pump rebate, customers must purchase a qualifying unit from an approved contractor. The unit must be used for cooling and heating purposes; therefore, ductless mini-split air conditioners do not qualify. The AHRI certificate must be in the residential category of “Variable-speed Ductless Mini-Split and Multi-Split Heat Pumps.” Ducted or mix-ducted mini-split heat pumps do not qualify.

In order to be eligible for a GSHP rebate, customers must purchase a qualifying unit. High efficiency equipment rebates will not be paid without QI from an approved contractor. Contractors must have a NATE-certified or IGSPHA accredited technician on staff, attend all required trainings conducted by the Company, follow all program guidelines, and be approved by the Company. Contractors who do not comply with the product requirements and guidelines are not allowed to participate in the product, including suspensions during the calendar year.

In order to be eligible for the WCC device rebate, the existing air conditioning or ASHP equipment must have been installed in 2009 or prior.

F. Stakeholder Involvement

The Company considers stakeholders for the HEAC product to be the HVAC contractors and distributors, the Colorado Energy Office (CEO), local municipalities within the PSCo
service territory, and environmental organizations. Stakeholders will be invited to share their product suggestions during the Company’s quarterly DSM Roundtable Meetings. In addition, Xcel Energy is a member of the Consortium for Energy Efficiency (CEE), and monitors and participates in its initiatives related to residential HVAC equipment.

G. Rebates & Incentives

The Company will pay rebates for the purchase and QI of qualifying high efficiency air conditioning equipment or for the purchase and installation of a WCC device. Plan A New Equipment, Plan B Trade-In Equipment, GSHP and WCC device rebates are paid directly to the customer, while QI incentives are paid to the contractor. Plan B Trade-In Equipment rebates include the same rebate levels as Plan A New Equipment measures, as well as an additional rebate for the trade-in of the existing unit that is assumed to be functioning or in need of minor repairs. New equipment measures must meet both the SEER and EER standards to receive a rebate under either the Plan A New Equipment or Plan B Trade-In Equipment rebate options. The rebate is paid according to the lesser value of the SEER/EER. The following tables describe the customer rebate and contractor incentive levels available.

### Plan A New Equipment and Plan B Trade-In Equipment with QI Rebate Levels

<table>
<thead>
<tr>
<th>Equipment Tier</th>
<th>SEER</th>
<th>EER</th>
<th>Plan A New Equipment Rebate*</th>
<th>Plan B Early Retirement Rebate*</th>
<th>Total Customer Rebate Available*</th>
<th>Total Contractor QI Incentive*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>13.0</td>
<td>below 12.0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$50</td>
</tr>
<tr>
<td>Tier 1</td>
<td>14.5</td>
<td>12.0</td>
<td>$0</td>
<td>$500</td>
<td>$500</td>
<td>$50</td>
</tr>
<tr>
<td>Tier 2</td>
<td>15.0</td>
<td>12.5</td>
<td>$350</td>
<td>$500</td>
<td>$850</td>
<td>$50</td>
</tr>
<tr>
<td>Tier 3</td>
<td>16.0</td>
<td>13.0</td>
<td>$500</td>
<td>$500</td>
<td>$1,000</td>
<td>$50</td>
</tr>
<tr>
<td>Tier 3</td>
<td>17.0</td>
<td>13.0</td>
<td>$650</td>
<td>$500</td>
<td>$1,150</td>
<td>$50</td>
</tr>
</tbody>
</table>

*Rebates and incentives are dependent on contractor participation/acceptance into the product and contractor following QI guidelines.

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 negotiate with the homeowners as to who will receive the rebate. The QI incentive is paid to the contractor on submittal and approval of a completed application signed by the customer.

### Ductless Mini-Split Heat Pump Rebate Level

<table>
<thead>
<tr>
<th>Equipment</th>
<th>SEER</th>
<th>HSPF</th>
<th>New Equipment Rebate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductless Mini-Split Heat Pump</td>
<td>15.0 – 26.0</td>
<td>9 – 12</td>
<td>$200</td>
</tr>
</tbody>
</table>
**GSHP Rebate Level**
Eligible customers (electrically-heated homes where natural gas is not in use) can receive a rebate for GSHPs with QI as closed-loop systems used for both heating and cooling.

<table>
<thead>
<tr>
<th>GSHP Application</th>
<th>Rebate/Heating Ton</th>
<th>Average Tons</th>
<th>Average Total Rebate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Homes</td>
<td>$300</td>
<td>4.7</td>
<td>$1,410</td>
</tr>
<tr>
<td>New Homes</td>
<td>$300</td>
<td>3.1</td>
<td>$930</td>
</tr>
</tbody>
</table>

*Rebates are dependent on contractor participation/acceptance into the product and contractor following QI guidelines.

**WCC Rebate Level**
Eligible customers can receive a $35 rebate for a WCC device installation onto an existing unit.

Customers who receive a rebate through another DSM product (e.g., Home Performance with ENERGY STAR 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.

Rebate applications must be submitted by July 31 of the year following purchase and installation to qualify for a rebate.