eebc
growing the industry together

Energy Efficiency Business Coalition
HVAC/HP ACTION GROUP

8th MEETING | JULY 7, 2022

Distributor, Manufacturer, & Industry Stakeholder

WELCOME

RESOURCES on EEBC Website

- *HVAC/Heat Pump Resource Hub* | https://www.eebco.org/HVAC-HP-Action-Group
- *Member Resource Library* | https://www.eebco.org/resource-library

HVAC/HEAT PUMP ACTION GROUP, CO_CHAIRS | *2022 MEETINGS/RESOURCE HUB*

Shawn LeMons, Mitsubishi Electric Trane HVAC US LLC *slemons@hvac.mea.com* | 720.648.0505
Pete Perret, GA Larson *pete.perret@galarson.com* | 719.205.1306

AGENDA

| **Welcome** Patricia Rothwell, Executive Director, EEBC
| **Introductions** Co-chairs HVAC/HP Action Group
| **Anti-Trust Review**

| **Status Update | Heat Pump (Electrification) Rebate Program by City of Denver**
Lee Valenzuela I CASR Administrator - Community Energy Programs
Lee.Valenzuela@denvergov.org

| **Heat Pump Forecast | Ad Hoc Working Group Report Out**

| **Regulatory Update |Inform, Advocate, & Influence**

- HP/HVAC Policy Action Begins July!
- How to Give Input to Xcel Energy's New Beneficial Electrification HP Rebate Levels and Savings Goals
- EEBC raising $50,000 by August 31st from members to cover legal costs, etc.

| **Update | "*Hiring Pipeline*" Program For EEBC Contractor Members**
EEBC's "Good Green Jobs" 3-Year Program with the City of Denver

- Invite Hiring Managers to Plug-n to EEBC's "Hiring Pipeline" at the next HVAC/HP Action Group Meeting for Contractors
- On Thursday, July 21st| 4pm-5pm ***REGISTER***

City of Denver Electrification Rebate Program

DENVER
THE MILE HIGH CITY

Status Update

- A general overview of Denver's Heat Pump Rebate Program so far and what their plans are for the future

- An Open Forum Session for Q&A from EEBC members

Lee Valenzuela, Community Energy Programs Administrator, "The City of Denver has definitely seen great success with our heat pump rebates .The program was open from April 22 to June 24 and so far we've provided 286 heat pump rebates".

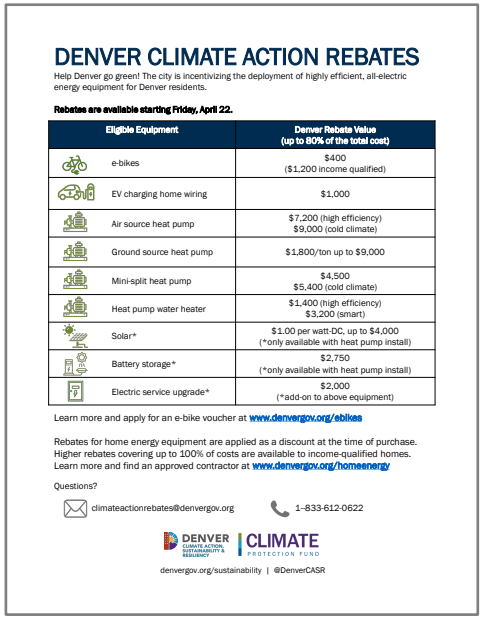
Denver Electrification HP Rebates

| Released April 22, 2022

- DENVER CLIMATE ACTION REBATES | *FLYER*
- XCEL ENERGY COLORADO RESIDENTIAL REBATE SUMMARY | *FLYER*

Invite Your Contractor/Dealers to:
NEXT HVAC/HEAT PUMP ACTION GROUP MEETING
| JULY 21st @ 3-4:00 pm | ***REGISTER***

Status Updates:
- Denver HP Rebates, Plus Other Electrification Rebates Manager Updates
- "Hiring Pipeline" for EEBC Action Group Members | invite your hiring managers!



DENVER CLIMATE ACTION REBATES

Help Denver go green! The city is incentivizing the deployment of highly efficient, all-electric energy equipment for Denver residents.

Rebates are available starting Friday, April 22.

Eligible Equipment	Denver Rebate Value (up to 80% of the total cost)
e-bikes	$400 ($1,200 income qualified)
EV charging home wiring	$1,000
Air source heat pump	$7,200 (high efficiency) $9,000 (cold climate)
Ground source heat pump	$1,800/ton up to $9,000
Mini-split heat pump	$4,500 $5,400 (cold climate)
Heat pump water heater	$1,400 (high efficiency) $3,200 (smart)
Solar*	$1.00 per watt-DC, up to $4,000 (*only available with heat pump install)
Battery storage*	$2,750 (*only available with heat pump install)
Electric service upgrade*	$2,000 (*add-on to above equipment)

Learn more and apply for an e-bike voucher at www.denvergov.org/ebikes

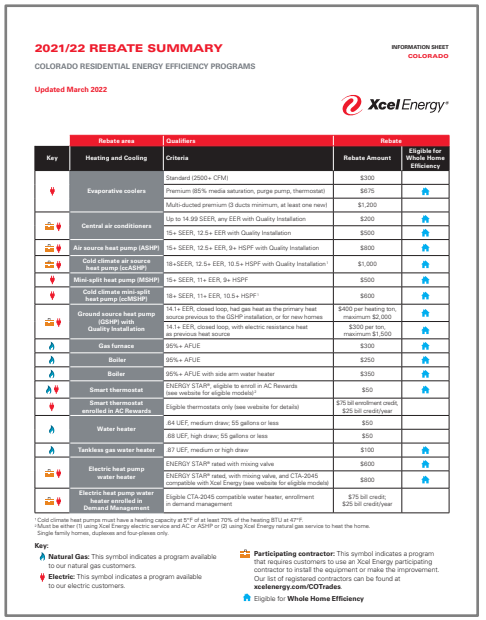
Rebates for home energy equipment are applied as a discount at the time of purchase. Higher rebates covering up to 100% of costs are available to income-qualified homes. Learn more and find an approved contractor at www.denvergov.org/homeenergy

Questions?

climateactionrebates@denvergov.org 1-833-612-0622

DENVER CLIMATE ACTION, SUSTAINABILITY & RESILIENCY | CLIMATE PROTECTION FUND

denvergov.org/sustainability | @DenverCASR



2021/22 REBATE SUMMARY

INFORMATION SHEET COLORADO

COLORADO RESIDENTIAL ENERGY EFFICIENCY PROGRAMS

Updated March 2022

Xcel Energy®

Key	Rebate area: Heating and Cooling	Qualifiers: Criteria	Rebate: Rebate Amount	Rebate: Eligible for Whole Home Efficiency
	Evaporative coolers	Standard (2500+ CFM)	$300	
		Premium (85% media saturation, purge pump, thermostat)	$675	
		Multi-ducted premium (3 ducts minimum, at least one new)	$1,200	
	Central air conditioners	Up to 14.99 SEER, any EER with Quality Installation	$200	
		15+ SEER, 12.5+ EER with Quality Installation	$550	
	Air source heat pump (ASHP)	15+ SEER, 12.5+ EER, 9+ HSPF with Quality Installation	$800	
	Cold climate air source heat pump (ccASHP)	18+SEER, 12.5+ EER, 10.5+ HSPF with Quality Installation[1]	$1,000	
	Mini-split heat pump (MSHP)	15+ SEER, 11+ EER, 9+ HSPF	$500	
	Cold climate mini-split heat pump (ccMSHP)	18+ SEER, 11+ EER, 10.5+ HSPF[1]	$600	
	Ground source heat pump (GSHP) with Quality Installation	14.1+ EER, closed loop, heat gas heat as the primary heat source previous to the GSHP installation, or for new homes	$400 per heating ton, maximum $2,000	
		14.1+ EER, closed loop, with electric resistance heat as previous heat source	$300 per ton, maximum $1,500	
	Gas furnace	95%+ AFUE	$300	
	Boiler	95%+ AFUE	$250	
	Boiler	95%+ AFUE with side arm water heater	$350	
	Smart thermostat	ENERGY STAR®, eligible to enroll in AC Rewards (see website for eligible models)[2]	$50	
	Smart thermostat enrolled in AC Rewards	Eligible thermostats only (see website for details)	$75 bill enrollment credit, $25 bill credit/year	
	Water heater	.64 UEF, medium draw; 55 gallons or less	$50	
		.68 UEF, high draw; 55 gallons or less	$50	
	Tankless gas water heater	.87 UEF, medium or high draw	$100	
	Electric heat pump water heater	ENERGY STAR® rated with mixing valve	$600	
		ENERGY STAR® rated, with mixing valve, and CTA-2045 compatible with Xcel Energy (see website for eligible models)	$800	
	Electric heat pump water heater enrolled in Demand Management	Eligible CTA-2045 compatible water heater, enrollment in demand management	$75 bill credit; $25 bill credit/year	

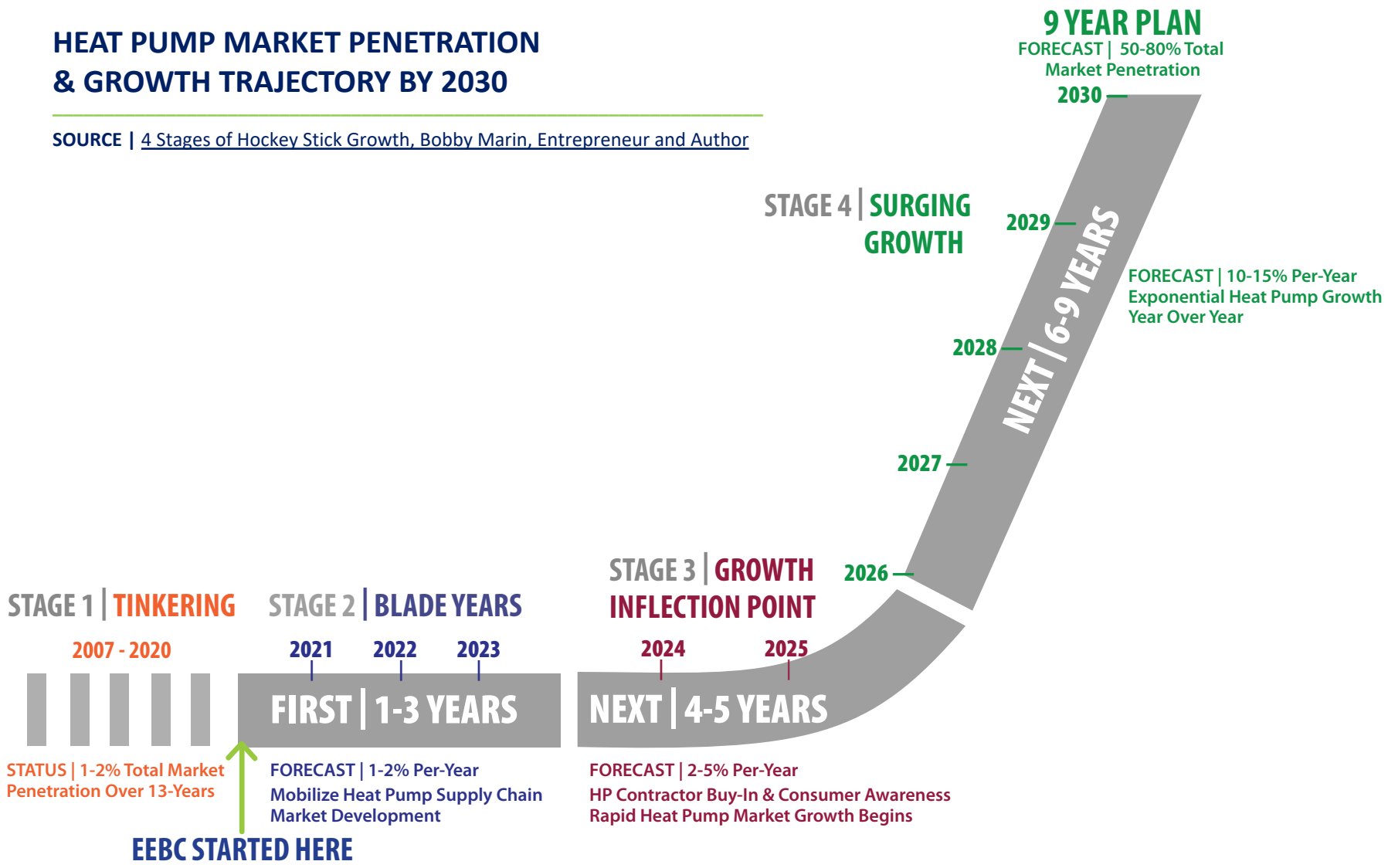
[1] Cold climate heat pumps must have a heating capacity at 5°F of at least 70% of the heating BTU at 47°F.
[2] Must be either (1) using Xcel Energy electric service and AC or ASHP or (2) using Xcel Energy natural gas service to heat the home. Single family homes, duplexes and four-plexes only.

Key:
- **Natural Gas:** This symbol indicates a program available to our natural gas customers.
- **Electric:** This symbol indicates a program available to our electric customers.
- **Participating contractor:** This symbol indicates a program that requires customers to use an Xcel Energy participating contractor to install the equipment or make the improvement. Our list of registered contractors can be found at xcelenergy.com/COTrades
- Eligible for **Whole Home Efficiency**

COLORADO'S SHARED HEAT PUMP ACCELERATION FORECAST

HEAT PUMP MARKET PENETRATION & GROWTH TRAJECTORY BY 2030

SOURCE | 4 Stages of Hockey Stick Growth, Bobby Marin, Entrepreneur and Author



Review Data Analytics & Metrics Discussion | ASHP Adoption HP Projections for Forecast

— CO ASHP 2030 Adoption Estimate | SPREADSHEET

— **COLORADO ASHP 2030 ADOPTION ESTIMATE** | *SPREADSHEET*

ASHP Adoption Forecast

***Includes** Assumed Legacy Electric Heat Replacement*

Year	Annual ASHP Installs (Thousands)						
	CT	MA	ME	NH	RI	VT	ISO-NE
2021	3.0	18.4	17.8	2.9	1.9	6.0	50.0
2022	3.5	21.1	22.2	3.9	2.3	6.2	59.3
2023	4.0	24.3	22.9	5.1	2.7	6.9	65.9
2024	4.6	28.0	23.5	5.6	3.3	7.5	72.5
2025	5.2	32.1	24.3	6.2	3.9	8.0	79.8
2026	6.1	37.0	25.0	6.8	4.7	8.5	88.1
2027	7.0	42.5	25.7	7.5	5.7	9.0	97.4
2028	8.0	48.9	26.5	8.2	6.8	9.5	107.9
2029	9.2	56.2	27.3	9.1	8.2	10.0	120.0
2030	10.6	64.7	28.1	10.0	9.8	10.5	133.6
Cumulative Total	**61.0**	**373.2**	**243.3**	**65.4**	**49.4**	**82.2**	**874.4**
Approx. Share of Households with ASHP in 2030 (%) *	**4.2%**	**13.1%**	**40.2%**	**10.9%**	**11.0%**	**29.5%**	**14.0%**
Approx. Share of Legacy Electric Heat Replacement **	**16%**	**15%**	**6%**	**9%**	**10%**	**5%**	**13%**

* Based on Moody's Analytics November 2020 forecast of number of households by state

** Source: U.S. Census Bureau, Selected Housing Characteristics, 2013-2017 American Community Survey 5-year Estimates

HP Forecast **Meeting Minutes** | April 15 — *All MEETING MATERIALS to DATE*

MEETING OUTCOME Xcel Energy discovered their baseline was based on HP and switched to AC, giving them more flexibility to lower the EER and HSPF. See recap of proposed chart [above].

EEBC MANUFACTURERS AGREED Short-term, these new levels are a move in the right direction and enable a large portion of their premium, ccASHP and ccMSHP, equipment and inverter-driven products to be eligible for heat pump rebates. This is the first step in more changes to come through the 2023 DSM Extension filing, Strategic Issues filing, and 2024-2025 DSM full filing.
Long-term, manufacturers agreed to provide case studies and data analytics from other utilities and programs who have dropped the EER or have alternative methods. Also, requested to "keep an eye" on SEER ratings as additional adjustments are needed because the units "take a big hit"

NEXT STEPS Manufacturers to follow up with information/data on old ratings vs new EER 2, HSPF 2, & SEER 2 to Xcel re-rated data. Xcel asked EEBC to coordinate the data delivery to Xcel.

DISCUSSION How the Strategic Issues settlement anticipates the Cost of Carbon Tax built into a modified TRC. Big changes unknow in cost and benefits balancing for Xcel Energy vs to consumer.

OTHER TOPICS: Xcel asked is refrigerant are seen to affect savings. Manufacturers said "no". Impacts adding copper and refrigerant monitors. Discussed how increased renewables energy source elevates the importance of the KW and values peak savings to offset gap from more gas savings. If Xcel Energy can claim more carbon reduction that helps their savings TRC model. Verified dual fuel helps mitigate grid impact. Xcel Energy gave overview of how EER works technically (need manufacturers to fill in this explanation).

XCEL ENERGY'S ULTIMATE OBJECTIVE OF EER To ensure capacity is not challenged during summer peak times defined as 3pm-7pm, M-F, during Jun 1 - Sep 30 months. The result is avoiding cost of next generation assets started up to service those peak loads. Thus, planning for peak use keeps Xcel Energy from over building assets – the most expensive energy.

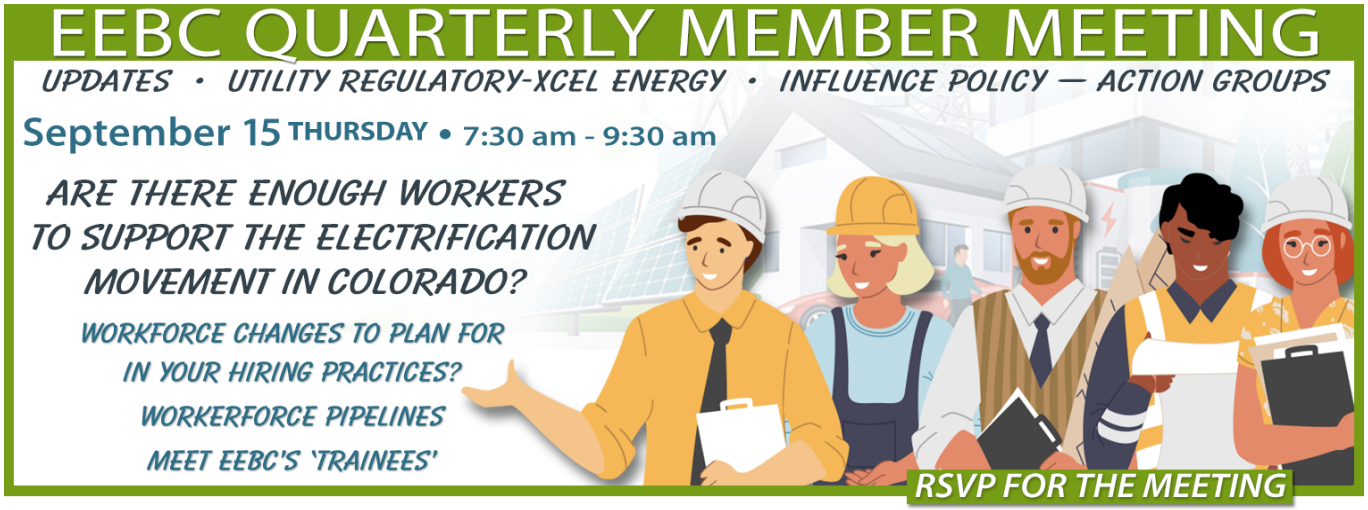
EEBC PAC TO ASK MANUFACTURES AND XCEL ENERGY Check if submitting positive comments into 60-day notice to counter opposition based on members confidence in collaboration for long-term rating levels that will make needed improvements, is nice to have or preferred to have.

EEBC MANUFACTURERS ATTENDED
Doug White, Trane Technologies, Doug.White@tranetechnologies.com
Brady Wooley, Trane Technologies, BWoolley@trane.com
Robert Glass, Daikin, Goodman, Amana, Robert.Glass@goodmanmfg.com
Sam Beeson Mitsubishi, sbeeson@hvac.mea.com
Shawn LeMons, Mitsubishi, EEBC HP Action Group Chair, slemons@hvac.mea.com
Mark Brown, Carrier West, mbrown@carrierwest.com
Patricia Rothwell, EEBC, patriica@eebco.org

XCEL ENERGY ATTENDED
Joshua Martin, Joshua.C.Martin@xcelenergy.com
Mike Papula, Michael.P.Papula@xcelenergy.com
Ann Kirkpatrick, ann.kirkpatrick@xcelenergy.com

Register Today!

HVAC/HEAT PUMP ACTION GROUPS | *RESOURCE HUB*
— Invite your contractor/dealers | July 21st @ 3-4:00 pm | *REGISTER*



DEFINITION

BENEFICIAL ELECTRIFICATION

Use electricity to do things that used to be done with fossil fuels

— Xcel Energy