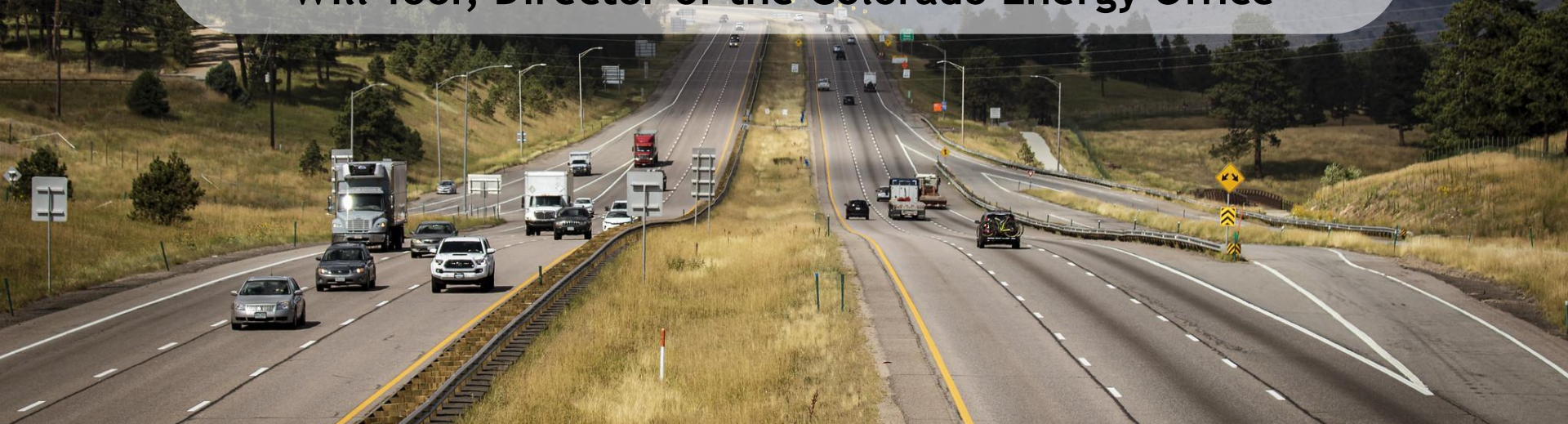


# CEO Presentation on Transportation Electrification

Presentation to the Legislative Interim Committee on  
Ozone Air Quality

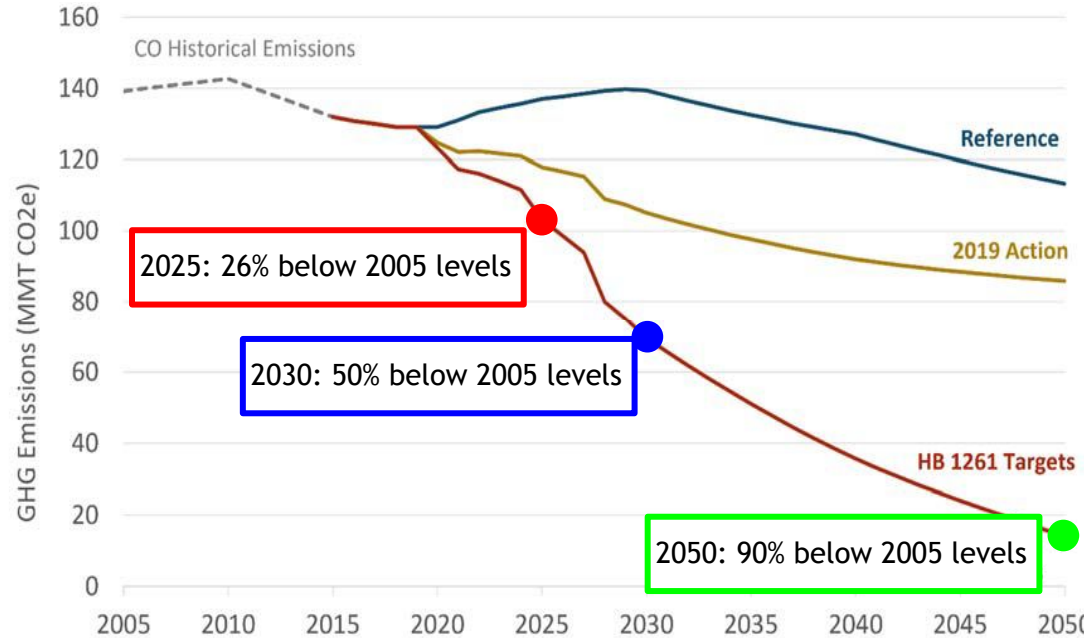
December 8, 2023

Will Toor, Director of the Colorado Energy Office



# GHG Pollution Reduction Roadmap

- Economy wide GHG reduction goals
  - 2025: 26% below 2005 levels
  - 2030: 50% below 2005 levels
  - 2050: net zero
- Transportation is one of the largest GHG emitting sectors in Colorado
- Transportation emission reductions goal of 12.7 million metric tons by 2030 (41% below 2005 levels); may be revised in Roadmap update
- Reducing emissions from L/MD vehicles is a key strategy (over 60% of transportation emissions)



# Colorado 2023 EV Plan

- Completed March 2023
- Collaboration between CEO, CDOT, and CDPHE
- Builds on 2018 and 2020 plans and continues many initiatives in progress (see plan Appendix)
- Increased focus on equity, medium/heavy-duty vehicles, electric mobility
- Whole of government approach, including: legislative and regulatory engagement, vehicle incentives, charging infrastructure investment, workforce development, planning and coordination



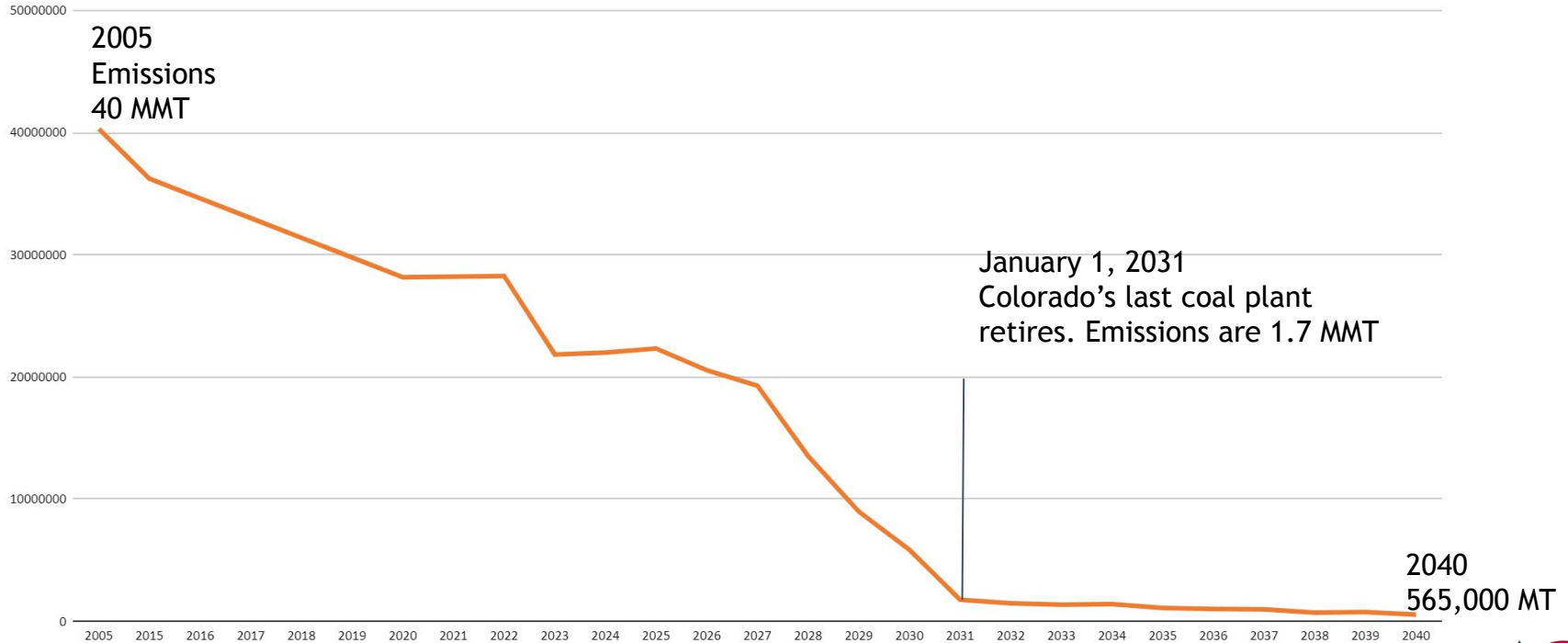
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# Key Goals in the 2023 EV Plan

- 940,000 EVs on the road by 2030; 2.1 million by 2035
- Increase EV sales to 65,000 in 2025, 70% of new vehicle sales by 2030
- 35,000 medium/heavy duty ZEVs on the road by 2030. *(from Clean Truck Strategy)*
- Increase charging ports awarded to 1,700 DCFC and 5,800 public Level 2 by 2025.
- Ensure at least 40% of funding for transportation electrification programs is invested in grants and rebates for DICs and LMI Coloradans.
- Provide grants, rebates, and tax credits for at least 10,000 new eBikes by 2025.



# Projected CO2 Emissions from electricity generation



# Some Key New Actions in the 2023 EV Plan



## Light Duty Vehicles and Infrastructure

- Completed a rulemaking to extend and expand Colorado's clean car standard through 2032
- Significant expansion and extension of the state ZEV tax credit through at least 2027
- Adjust program requirements and explore other solutions to improve public EV charger reliability



## Electric Mobility *(eBikes and shared modes)*

- Launch several new eBike programs
- Launch CAMP emobility program
- Creation of a state eBike tax credit



## Medium / Heavy Duty Vehicles and Infrastructure

- Implement key near-term actions in the Clean Truck Strategy (CDOT, CDPHE, CEO)
- Adoption of the Advanced Clean Truck and Low NOx Omnibus rules at the Air Quality Control Commission

## Cross-cutting

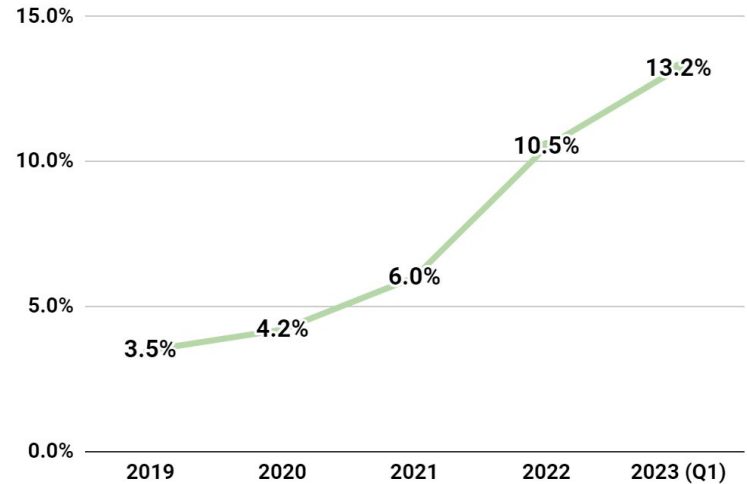
- Programming and Funding
- Equity and Engagement
- Policy, Planning, and Data
- State Fleet
- Workforce Development



# State of the EV Market in Colorado

- In Q1 of 2023, Colorado was ranked sixth in the nation for EV market share
- In their 2023 State Transportation Electrification Scorecard, the American Council for an Energy-Efficient Economy ranked Colorado as the third strongest state in transportation electrification policy
- EV market share in recent months around 17%

*Percent EV of Colorado New Vehicle Sales, 2019-2023*



# Background on Clean Vehicle Standards in Colorado

- Colorado adopted Low Emission Vehicle standards in 2018, and the Zero Emission Vehicle standard in 2019.
- 2021 GHG Pollution Reduction Roadmap directed state agencies to engage in federal and California rulemakings to ensure vehicle standards for post model year 2025 could meet the state's needs.
- 2022 Clean Truck Strategy directed CDPHE to propose a rulemaking to adopt the Advanced Clean Truck Rule.
- 2023 EV Plan directed CDPHE to propose a rulemaking this year to extend and expand our standard for 2027 - 2032.





# Advanced Clean Trucks Rule

- Adopted by the AQCC in April 2023, was an action in the 2022 Clean Truck Strategy
- ACT requires manufacturers who sell M/HD on-road vehicles to sell an increasing percentage of ZEVs of their annual sales from MY 2027 to 2035.
- Provides flexibilities to meet requirements, e.g. can trade credits between classes, manufacturers, and years, and can earn early credits.
- Also includes one-time fleet reporting requirements.

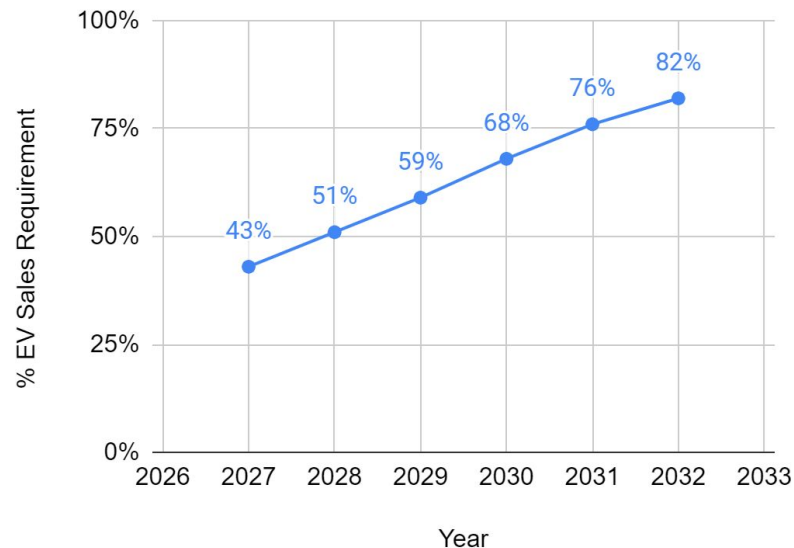
*ZEV sales percentage schedule by vehicle group and model year*

Model year	Class 2b-3 (pick-up trucks and vans)	Class 4-8 (rigid trucks)	Class 7-8 (tractor trucks)
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035	55%	75%	40%

# Colorado Clean Car Standards

- Adopted October 2023 by the AQCC
- Extends Clean Car Standard from 2027 through 2032, reaching 82% of new vehicle sales being zero emission
- Adopts Zero Emission Vehicle (ZEV) and Low Emission Vehicle (LEV) standards
- Requires the Division evaluate the costs, benefits, and feasibility of extending of ZEV standards through 2035 by end of 2028
- Includes various environmental justice credits that manufacturers can use to earn additional credits by placing vehicles into equity programs.

## ZEV sales percentage requirements



# HB23-1233 EV Charging and Parking Requirements

- Requires that the State Electrical Board adopt the EV Ready requirements approved by the Energy Codes Board for all new MFH and major renovations starting on March 1, 2024.
- Prohibits unreasonable prohibition on installation of charging and EV parking for residential and commercial rental properties, HOAs, and by local and county governments.
- Requires that a parking space served by an EV or used to site EV charging equipment counts towards meeting minimum parking requirements.
- Exempts charging stations from business personal property tax through 2030.



# Commercial EV Ready Requirements

- EV space requirements for commercial buildings are outlined in the adjoining table.
- Any space type is allowed to substitute for a lesser space type (i.e. an EV ready space can substitute for an EV capable space, but an EV capable space cannot substitute for an EV ready space)
- A DC fast charger (level 3 charger) may substitute for up to **10 spaces of any type** so long as at least **20 percent of spaces** are an EV space type.
- EVSE must be capable of charging at a minimum rate of 6.2kVA or 3.3kVA when serving multiple EVSE spaces

Building Type / Space Type	EVSE Installed Space	EV Ready Space	EV Capable Space	EV Capable Light Space
All commercial buildings, except for R-2 occupancies, with 10 or less parking spaces.	0	2 spaces	0	0
Commercial buildings, except for R-2 occupancies, with greater than 10 parking spaces.	2% of spaces	8% of spaces	10% of spaces	10% of spaces

# Multifamily EV Ready Requirements

- EV space requirements for multifamily buildings are outlined in the adjoining table
- Any space type is allowed to substitute for a lesser space type (i.e. an EV ready space can substitute for an EV capable space, but an EV capable space cannot substitute for an EV ready space)
- A DC fast charger (level 3 charger) may substitute for up to **5 spaces of any type** so long as at least **60 percent of spaces** are an EV space type.
- EVSE must be capable of charging at a minimum rate of 6.2kVA or 3.3kVA when serving multiple EVSE spaces

<b>Building Type / Space Type</b>	<b>EVSE Installed Space</b>	<b>EV Ready Space</b>	<b>EV Capable Space</b>	<b>EV Capable Light Space</b>
<b>R-2 occupancies with 10 or less parking spaces</b>	0	15% of spaces	10% of spaces	10% of spaces
<b>R-2 occupancies with greater than 10 parking spaces.</b>	5% of spaces	15% of spaces	10% of spaces	30% of spaces

# *HB23-1272 Tax Policy That Advances Decarbonization*

## **Light-Duty Electric Vehicle and Light-Duty Electric Truck Tax Credits**

- Increases tax credits to \$5,000 in the next few years
- Starting January 1, 2024, there will be an additional \$2,500 of state tax credit available for EVs with an MSRP under \$35,000

## **Medium- and Heavy-Duty Electric Truck Tax Credits**

- Increases tax credits to \$12,000 in the next few years, then steps down to \$4,000 for MD/\$8,000 for HD

## **eBike Tax Credits**

- From April 1, 2024 through December 31, 2032, a qualified retailer is allowed a \$500 state tax credit for each retail sale of a new qualified eBike.

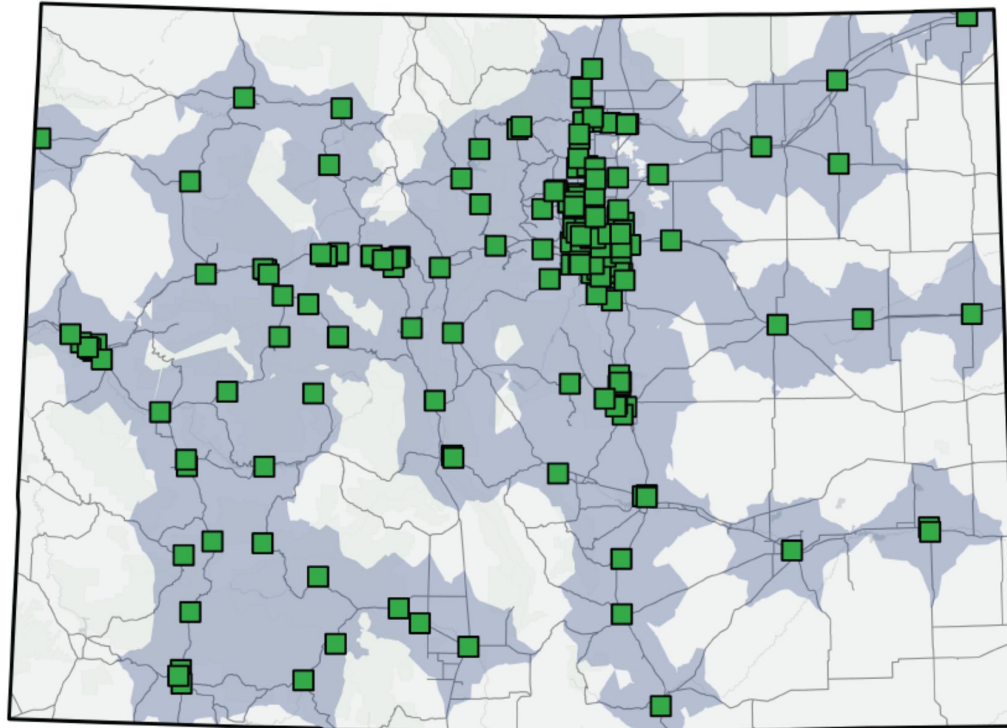
# Charging Infrastructure Programs

- **Charge Ahead Colorado: Community-based Level 2 and DC Fast-Charging stations**
  - Funding rounds in September, January and May, ~\$9.2M
  - New: Enhanced incentives for affordable housing and DICs
- **DCFC Plazas: High-speed charging stations**
  - Awards made in August 2023, next funding rounds Fall 2023 and Spring 2024, ~\$40M. Last round awarded \$17M for 188 chargers, received 6x the demand available.
  - New: Enhanced incentives for DICs, integration with battery storage
- **Fleet ZERO (new!): Fleet oriented charging offering for light-, medium- and heavy-duty fleets**
  - Award round closed June 2023, next funding rounds Fall 2023 and Spring 2024, ~\$7.4M
  - Enhanced incentives for school districts, local govts, DBE/MBE/WBE, etc.



# Publicly Accessible DCFC Charging Network

301 Stations as of August 2023 (75% coverage)



## State Highway Network

Total Road Miles

9,073

Road Miles Within a 30 Mile  
Drive of a Fast Charger

6,844

% Coverage

75%

## Legend

 DC Fast Charging Stations

 30 Mile Driving Buffer

 State Highway Network



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Data Source: US DOE  
Created: August 2023



# Government & Utility Support - MHD Vehicle Investment

## ACT States M/HD ZEV Purchase Incentive Comparison - Example Vehicle Classes

State	Class 2b	Class 5	Class 8
Colorado	Clean Fleet: \$8,000 State tax credit: \$5,000 Total: \$13,000	Clean Fleet: ~\$57,000 (50% of purchase price) State tax credit: \$12,000 Total: \$69,000	Clean Fleet: ~\$121,000 (60% of purchase price) State tax credit: \$12,000 Total: \$133,000
California	HVIP: \$7,500	HVIP: \$60,000	HVIP: \$120,000
Massachusetts	Mor-EV Truck: \$7,500	Mor-EV Truck: \$45,000	Mor-EV Truck: \$90,000
New York	NYT VIP: ~\$12,000 (95% incremental cost)	NYT VIP: ~\$22,000 (95% incremental cost, cap of \$110,000)	NYT VIP: ~\$55,000 (95% incremental cost, cap of \$185,000)
New Jersey	NJ ZIP: \$20,000	NJ ZIP: \$75,000	NJ ZIP: \$175,000

- CA established incentives before IRA was adopted
- Other ACT states (Oregon, Washington, New Jersey, New York, Vermont) do not have M/HD ZEV charging incentive programs that we are aware of
- Some figures are estimates based on vehicle / infrastructure costs in EIA/CBA



# Vehicle Exchange Colorado (VXC)

- VXC is a new statewide point of sale rebate program for income-qualified Coloradans to incentivize replacing old or high-emitting vehicles with electric vehicles (EVs)
  - **New electric vehicle (BEV or PHEV): \$6,000**
  - **Used electric vehicle (BEV or PHEV): \$4,000**
- VXC launched on August 31, 2023
- “Stackable” with other incentives



# eBike Programs

- **eBike grant program** - funds local eBike programs for low and moderate income residents
- **eBike rebate program** - point of sale rebate for low and moderate income residents (now launched!)
- **eCargo bike pilot program** - pilot program to fund ecargo bikes for deliveries (first round awarded)
- (coming soon) **eBike tax credit**

Rebate Voucher Amounts

Income Tier	Base Incentive Amount	Equipment Incentive	E-Cargo Bike Incentive	Adaptive E-Bike Incentive
Low-Income	\$1,100	+\$100	+\$300	+\$250
Moderate-Income	\$500	+\$100	+\$300	+\$250

# Community Accelerated Mobility Project (CAMP)

- CAMP Targeted Outcomes: Develop mobility solutions that meet needs specific to local communities with an electric mobility component including electric carshare, electric vanpool, eBikes, community charging infrastructure, etc.
- CAMP Phase 1, Technical Readiness: \$600,000 (2 rounds, approximately \$300,000 per round)
  - Round 1 open for applications through 10/27
  - Anticipated Round 2 ~Spring 2024
- CAMP Phase 2, Implementation: \$2M
  - Anticipated open for applications in early 2024
  - Phase 1 award not required to apply to Phase 2



# EV CO - Education Campaign

- Statewide EV education and awareness campaign to support the state's goal of 940,000 EVs on Colorado roads by 2030
- Launched in November 2022 with website, social media channels
- Up to date information about EV incentives, charging, environmental benefits, EV shopper tool, EVent calendar and more
- Partner toolkit for use by Colorado EV stakeholders



[Electric Vehicles Colorado](https://www.facebook.com/ElectricVehiclesColorado)



[@ElectricVehiclesCO](https://www.instagram.com/ElectricVehiclesCO)



[@Colorado\\_EV](https://twitter.com/Colorado_EV)



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<https://evco.colorado.gov/>



# Electrification Infrastructure

## *Planning for Increased Electric Loads*

# *Electrification Needs*

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- Electric load demand expected to increase 40% by 2040
- This includes major electrification projects:
  - EV and electric truck charging
  - Electric heat pumps for buildings
  - Oil and gas drilling rigs
  - Rooftop and community solar interconnection



# *CEO Priority - Distribution System Planning*

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1. Updating Distribution System Planning at the PUC
2. Cost allocation
3. Ensure timely utility investments into the electric system
4. Workforce development





# Questions?



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