COLORADO
Department of Transportation

Colorado Clean Truck Strategy: Development and Implementation

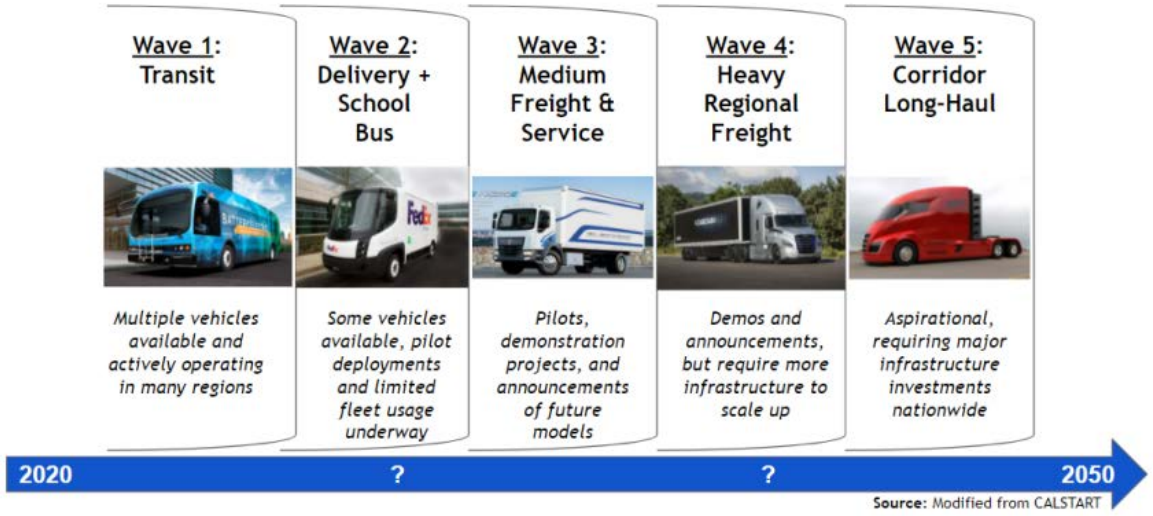
May 29, 2024

Colorado Clean Truck Strategy Objectives

The objective of the Colorado Clean Truck Strategy was to develop a comprehensive plan to transition the state's medium- and heavy-duty trucks and buses to low- and zero-emissions alternatives.

Key focus areas include:

- Investing in public and depot charging infrastructure
- Creating incentives for truck fleets to start switching to zero emissions vehicles
- Helping school districts and transit agencies switch to electric buses



Colorado's Clean Truck Strategy Timeline

Jul.-Nov. 2020

Colorado Signs Multistate M/HD ZEV MOU

- Kick off Clean Truck Strategy
- Public Meetings and stakeholder presentations
- CMCA ZEV Working Group
- M/HD Vehicle Study Kick-off

Oct.-Dec. 2021

M/HD Vehicle Study Completed

- Presentation of M/HD Vehicle Study results
- 3 public meetings
- Formation of stakeholder working group
- Draft Clean Truck Strategy

Jan.-Apr. 2022

Draft Colorado Clean Truck Strategy + Enterprise 10 Year Plans

- Release draft Clean Truck Strategy for comment
- Enterprise 10 Year Plans engagement
- Public meetings

May 2022

Clean Truck Strategy Finalized

- Finalize Enterprise 10 Year Plans
- Agencies weigh in on EPA rulemaking
- Final Strategy released

Jun.-Dec. 2022

Implementation in progress

- Continue work on early priorities of Clean Truck Strategy implementation, Enterprise program, electric school bus and clean trucks programs

Early 2023

AQCC Hearing & Rulemaking

Rulemaking on the AQCC for Advanced Clean Trucks (ACT) Rule and Low NOx Omnibus Rule

- Rulemaking hearing in 2023
- EPA rulemaking expected to be finalized.

Colorado Medium & Heavy Duty Vehicle Study (2021)

Medium and heavy duty market landscape review

- Highlighted developing successes and the challenges in the market

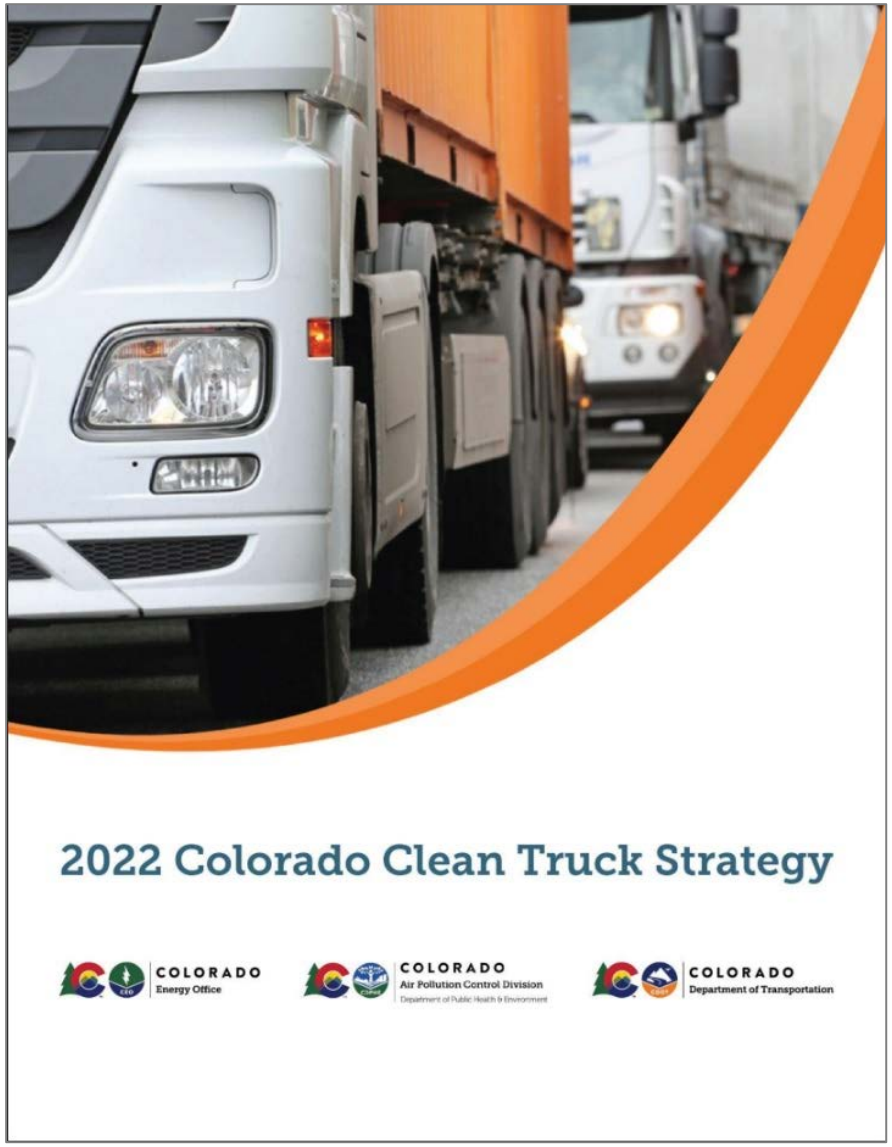
Policy considerations

- These recommendations fed into the Colorado Clean Truck Strategy

Modeling takeaways and implications

- Highlights the benefits and challenges with the transition to ZEV in this sector.

Final Colorado Clean Truck Strategy (2022)



- The final Colorado Clean Truck Strategy was released in 2022 and identified 35 action items to support the transition to zero-emission trucks and buses
- A key action item was to propose adoption of the Advanced Clean Truck and Low NOx Omnibus rules in Colorado
  - Both regulations were adopted in the spring of 2023
- Since 2022, staff at CEO, CDPHE, and CDOT have been working to implement the remaining action items

Colorado Medium & Heavy Duty Charging Study (2023)

The Colorado Energy Office recently led the development of a M/HD EV Charging Study that attempts to quantify the scale, cost, and location of charging necessary to support statewide 2030 M/HD electrification goals.

Key findings include:

- an estimated 30,000 ports are needed statewide by 2030
- majority at depots (11,500 L2 & 1,500 DC) & homes (17,000 L2)
- investment needs are heavily concentrated in the Denver Metro Area and Xcel Energy territory

Top 10 Utilities by Investment Need x 2030

Utility	Average Case	Conservative Case
1. Xcel Energy	$465,850,000	$587,050,000
2. United Power	$84,300,000	$108,680,000
3. Black Hills	$68,050,000	$84,570,000
4. City of Colorado Springs	$41,260,000	$51,060,000
5. Holy Cross Electric Assn	$32,300,000	$42,610,000
6. Intermountain Rural Elec Assr	$24,210,000	$30,250,000
7. Highline Electric Assn	$17,010,000	$23,440,000
8. Delta Montrose Electric	$10,490,000	$13,320,000
9. Empire Electric Assn	$10,060,000	$12,740,000
10. K C Electric Assn	$6,020,000	$8,710,000

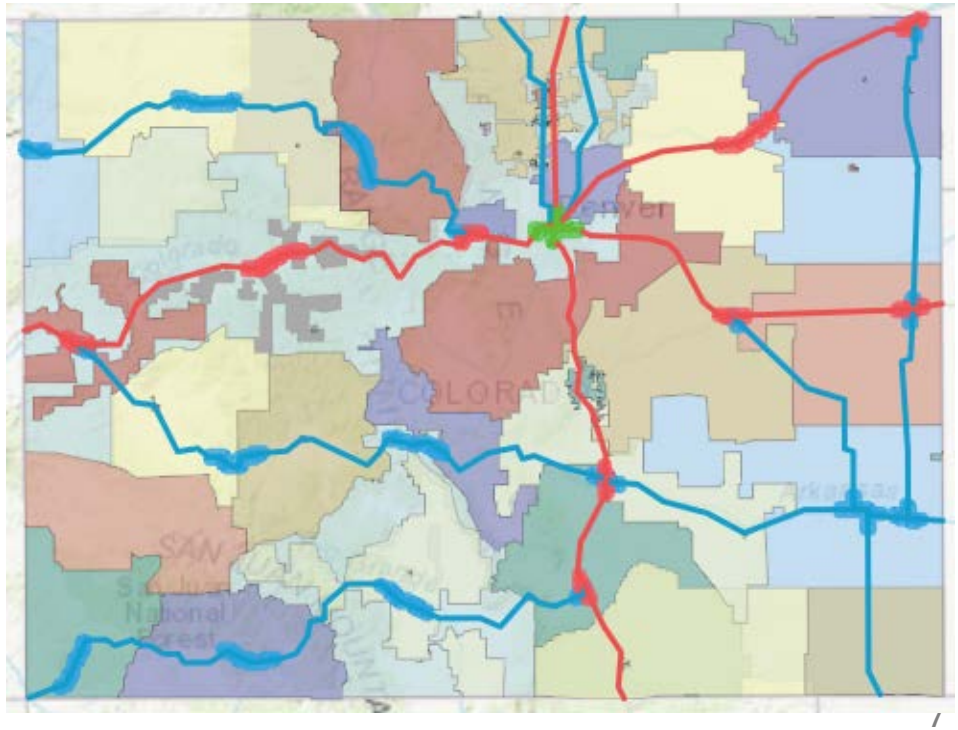
Top 10 Counties by Investment Need x 2030

County	Average Case	Conservative Case
1. Denver County	$90,430,000	$113,070,000
2. Weld County	$86,090,000	$109,740,000
3. Adams County	$77,130,000	$95,830,000
4. El Paso County	$71,640,000	$86,200,000
5. Arapahoe County	$65,410,000	$80,790,000
6. Jefferson County	$53,560,000	$64,010,000
7. Larimer County	$50,680,000	$63,450,000
8. Mesa County	$30,070,000	$37,710,000
9. Douglas County	$28,580,000	$36,100,000
10. Boulder County	$28,040,000	$35,840,000

Colorado Medium & Heavy Duty Charging Study (2023)

- Long-distance, heavy-duty charging is a relatively low percentage of need by quantity but complex and expensive to deploy
- The study identifies a phased approach focused initially on the Denver Metro Area, then interstate corridors, then the broader highway freight network

Long-Haul Charging Deployment Phases		
Phase	**Timeline**	**Siting**
Phase 1	2027	Denver Area
Phase 2	2027 – 2030	I-25, I-70, & I-76
Phase 3	2035	US 40, 50, 85, 160, 287, 385



Colorado's Transportation Electrification Enterprises (est. 2021)

Clean Transit Enterprise (CTE):
This enterprise is created within the Colorado Department of Transportation (CDOT) to support public transit electrification planning efforts, facility upgrades, fleet motor vehicle replacement, as well as construction and development of electric motor vehicle charging and fueling infrastructure. CTE is expected to receive $134 million in funding over the first 10 years.

Clean Fleet Enterprise (CFE):
This enterprise was legislatively created within the Colorado Department of Public Health and Environment (CDPHE) for the business purpose of incentivizing and supporting the use of electric motor vehicles and other clean fleet technologies by owners and operators of motor vehicle fleets. CFE is expected to receive $289 million over the next 10 years.

Community Access Enterprise (CAE):
This enterprise supports the widespread adoption of electric motor vehicles, equitably invests in transportation infrastructure, and incentivizes the acquisition and use of electric motor vehicles and electric alternatives to motor vehicles. Over the first decade, the Community Access Enterprise is expected to receive approximately $310 million to support electric vehicle (EV) charging and hydrogen fueling infrastructure and low and moderate income adoption of EVs and electric bicycles.

Fleet-ZERO Program

- The Fleet-ZERO Program is managed by the Colorado Energy Office (CEO) and funded through the Community Access Enterprise established by SB21-260.
- Fleet-ZERO is available statewide and designed to support depot charging, charging-as-a service, public/semi-public fleet charging.
- The first round of Fleet-ZERO funding in 2023 awarded:
  - $2.36 million to 12 organizations
  - 22 locations across Colorado
  - 126 charging ports
- The second round of Fleet-ZERO funding in 2024 awarded:
  - $2.6 million to 11 organizations
  - 20 locations
  - 275 charging ports

- Supported vehicle types include Heavy-Duty Tractors, Refuse Trucks, Campus Shuttles, Delivery Trucks, Armored Delivery Trucks, and more.

Clean Fleet Vehicle and Technology Program

- The Clean Fleet Vehicle & Technology Program is managed by the Colorado Department of Public Health & Environment (CDPHE) as part of the Clean Fleet Enterprise (CFE) established by SB21-260.
- CFVT is available statewide and designed to support the deployment of MHD zero-emission vehicles.
- The first round of CFVT in 2023 awarded $14 million to 17 organizations
- Supporting the purchase of 70 zero-emission vehicles
- Awarded vehicle types include Heavy-Duty Tractors, Refuse Trucks, Campus Shuttles, Fire Trucks, Street Sweepers, Delivery Vans, and more.

Colorado Electric School Bus Grant Program

- The Colorado Electric School Bus Grant Program is managed by the Colorado Department of Public Health & Environment (CDPHE) and supported through state SB22-193 funding.
- The program is available statewide and can be combined with federal EPA electric school bus grants, which are managed separately.
- The first round of ESB grants in 2023 awarded more than $24 million for 13 projects across the state.
  - Supporting the purchase of 67 vehicles.
- Awarded projects included both vehicles and charging infrastructure.

Current & Future Challenges

- Volatility in the ZEV market continues to create unexpected challenges for policymakers and program managers
- Uncoordinated planning between electric utilities and fleets can delay deployments or create unnecessary barriers
- Lack of ZEV education and awareness of fleet and facility managers, drivers, and others within an organization can create cultural resistance to the transition
- Current costs and capabilities of vehicles prevent some fleets (especially with specialized use cases) from benefiting from adoption in the short-term
- Large-scale build-out of charging and fueling infrastructure will take time and money

Current & Future Opportunities

- There is more funding to support this transition than ever before - federal, state, and utility resources all coming together
- The National Zero-Emission Freight Corridor Strategy released in March 2024 establishes a vision that extends beyond Colorado's borders and brings neighboring states into the conversation
- Vehicle technology continues to improve from a cost, range, and capability perspective
- ZEVs are increasingly visible in some Colorado communities and among major fleets, which may lead to greater acceptance and interest by the public and fleet operators
- The community of individuals working to support this effort - both in CO and throughout the US - is growing and building momentum

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Thank You

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